

**ANALYTICAL RESULTS
OF SURFACE WATER SAMPLES
COLLECTED FROM RACCOON CREEK
MAY 21, 1998**

Prepared for

**ARCO CHEMICAL COMPANY/BEAZER EAST INC.
Monaca, Pennsylvania**

Prepared by

**ICF KAISER ENGINEERS, INC.
Pittsburgh, Pennsylvania 15219**

June 15, 1998

TABLE OF CONTENTS

<i>Section</i>		<i>Page</i>
1.0	INTRODUCTION	1
2.0	SAMPLING.....	2
3.0	RESULTS.....	3

List of Figures

<i>Figure</i>		<i>Page</i>
1	Transect Location Map	4
2	Raccoon Creek Transect C Surface Water Benzene Concentrations	5
3	Raccoon Creek Transect D Surface Water Benzene Concentrations	6
4	Raccoon Creek Transect E Surface Water Benzene Concentrations	7

List of Tables

<i>Table</i>		<i>Page</i>
1	Groundwater Elevations, East and West Sides of Raccoon Creek.....	8
2	Summary of Analytical Results for Samples Collected from Raccoon Creek	9
3	Summary of Analytical Results for Benzene, July and October 1997 and February and May 1998	13

Appendices

Appendix A	Personal Data from USGS Moffatts Mill G.S.
Appendix B	Chain-of-Custody
Appendix C	Laboratory Reports
Appendix D	Data Validation Report

1.0 INTRODUCTION

This report presents the results of surface water samples collected from Raccoon Creek at the ARCO Chemical Company (ACC) / Beazer East Inc. (BEI) Monaca, PA site during the May 1998 quarterly monitoring event. The samples were collected in compliance with Appendix D of the Consent Order and Agreement (CO&A) between ACC, BEI and The Pennsylvania Department of Environmental Protection (PADEP) dated October 20, 1997.

2.0 SAMPLING

Surface water samples were collected on May 21, 1998 at the downstream locations nearest to the Raccoon Creek (RC) Area, Transects C, D, and E as defined in the 1997 CO&A. The locations of those three transects are shown in Figure 1. In addition, water elevations were measured and recorded from the monitoring wells in this area, which are listed in Table 1. A graph showing the Raccoon Creek flow rate at the USGS Moffatts Mill gaging station during the sampling event is provided in Appendix A.

A total of 23 surface water samples, including a duplicate from Transect C, were collected from Raccoon Creek May 21, 1998. These samples were collected at approximately the same three locations along Transects C, D, and E that were sampled in July, 1997. The locations were at the center of the stream, and approximately 30 feet from the east and west banks. At the center location, samples were collected at three depths: 6 inches below surface, 1 to 2 inches above the bottom, and midway between the surface and bottom. Samples from the east and west sides of the transect were collected at two depths: 1 to 2 inches above the bottom, and midway between the surface and bottom.

Access to the sampling locations was gained using a row boat. The boat was anchored at the sampling location during sample collection; care was taken to lay the anchors away from the sampling location so sediment would not be introduced into the water sample. The surface water samples were collected using a peristaltic pump to pump the water from the desired depth to the surface for collection into three 40 milliliter volatile organic analysis (VOA) vials preserved with hydrochloric acid (HCl). The depth of sample collection was controlled by securing tygon tubing to a probe long enough to reach the bottom of the creek. The tubing was secured at the desired depth from the bottom of the probe, and the probe was set on the bottom of the creek. Care was taken not to disturb the sediments at the sampling location and the water was closely monitored to ensure sediment was not included in the sample. After the sample had been collected, the tubing was moved to the correct depth for the next sample, reattached to the probe and the next sample was collected. One length of tubing was used for all sampling depths at each location; tubing was discarded and replaced between sampling locations.

The samples were uniquely numbered to identify the location, depth and date of sampling. The samples were numbered in the following format:

RC-CC-00-0598

Where:

- RC indicates Raccoon Creek;
- CC indicates transect (C, D, or E) and location (C = center, L = left bank, R = right bank [facing downstream]);
- 00 indicates sample depth in feet and tenths of a foot (0.0 feet); and
- 0598 indicates the date collected (May 1998).

Samples were logged onto a chain of custody (Appendix B) and stored on ice until receipt by the laboratory, Reliance Laboratories Inc. (Reliance) in Edison, NJ.

3.0 RESULTS

The samples were analyzed by USEPA Method 524.2 for BTEXS. The analytical results are listed in Table 2. Toluene, ethylbenzene, xylene, and styrene were not detected in samples collected from Transects C, D, and E.

Benzene concentrations were detected in 19 of the 23 samples from Transects C, D, and E; 7 from C, 6 from D, and 6 from E. One of the seven detections in Transect C was a duplicate sample. Within Transect C, the seven samples with detections of benzene ranged from 0.18 µg/l to 4.00 µg/l. The concentrations seemed to increase with depth, with the east side having the highest detected concentration, 4.00 µg/l. The samples collected from Transect D had concentrations of 0.22 µg/l, from the center of the stream approximately 1 to 2 inches from the bottom, to 1.01 µg/l, in a sample which was collected approximately 1 to 2 inches above the bottom on the west bank location of the stream. In Transect E, the samples with benzene detections ranged from 0.22 µg/l, located on the east bank 1 to 2 inches above the bottom of the stream, to 0.70 µg/l, on the west bank of the stream 1 to 2 inches above the bottom. The highest benzene concentration, 4.00 µg/l, was detected in Transect C on the east bank 1 to 2 inches above the bottom of the stream. The analytical results of benzene for Transects C, D, and E are illustrated in Figures 2, 3, and 4, respectively.

The laboratory report of the samples was provided by Reliance Laboratories, and is presented in Appendix C.

The data were validated upon receipt and found to be acceptable. All results for sample RC-DC-27-0598 were qualified "J" as estimated due to the analysis being performed outside of the 12-hour window for bromofluorobenzene. The data validation report is presented in Appendix D.

All of the samples collected in May 1998 from Transects C, D, and E had concentrations of benzene below 5 µg/L. Table 3 summarizes the results for benzene concentrations in samples collected during the July and October 1997 and February and May 1998 sampling events.

TABLE 1
Groundwater Elevations
East and West Sides of Raccoon Creek

WELL	GROUNDWATER ELEVATION (ft-amsl) ¹						
	7/3/96	7/17/96	7/21/97	7/24/97	10/28/97	2/25/98	5/21/98
MW-118	685.08	684.24	683.70	683.70	683.70	684.52	684.45
MW-119	683.95	683.76	683.47	683.42	683.07	683.49	683.69
MW-120	683.93	683.73	683.49	683.45	683.38	683.54	683.66
MW-121	684.06	683.88	683.58	683.56	683.59	683.54	683.59
MW-122	683.81	683.71	683.43	683.40	683.54	683.42	683.38
MW-152	684.01	683.80	683.49		683.36	683.52	683.65
MW-158S	683.84	683.80	683.41	683.40	683.49	683.46	683.46
MW-158D	683.60	683.55	683.29	683.28	683.42	683.27	683.27
MW-159	683.84	683.69	683.42	683.38	683.48	683.46	683.50
MW-160	683.62	683.44	683.15	683.11	683.21	683.5	683.55
MW-162S	683.91	683.74	683.49	683.44	683.30	683.47	683.66
MW-163S	683.91	683.80	683.47	683.46	683.45	683.48	683.58
MW-163D	684.01	683.89	683.62	683.60	683.53	683.61	683.66
MW-166D	683.82	683.71	683.47	683.45	683.43	683.45	683.53
MW-167	683.85		683.53	683.53	683.56	683.63	683.63
MW-169	683.91					683.68	683.67
MW-170	684.26					684.79	684.31
MW-344	683.65		683.36	683.37	683.42	684.04	684.02
MW-345	683.81		683.34	683.35	683.44	683.58	683.56
MW-359S	683.94		683.56	683.57	683.64	683.66	683.66
MW-359D	683.84		683.52	683.51	683.55	683.58	683.58
MW-360	683.95		683.57	683.58	683.61	683.66	683.65
MW-361S	683.88		683.56	683.55	683.60	683.6	683.62
MW-361D	683.88		683.55	683.54	683.59	683.6	683.64
MW-362	684.09		683.58	683.62	683.71	683.73	683.77
MW-501S	683.73		683.31	683.28	683.20	683.2	683.37
MW-501D	683.65		683.29	683.29	683.30	683.44	683.49
MW-502	683.94		683.48	683.45	683.31	683.48	683.66
RACCOON CREEK	683.50	683.60	683.51	683.37	683.25	683.22	683.23
OHIO RIVER			683.53	683.37	683.25	683.16	683.11

¹ ft-amsl = Foot above mean sea level

Note: The Raccoon Creek flow rate at the USGS Moffatts Mill, PA gaging station ranged from 129 cfs at midnight on May 21 to 113 cfs at midnight on May 22.

TABLE 2
Summary of Analytical Results
for Samples Collected in Raccoon Creek

SAMPLE ID SAMPLE DATE	RC-CC-00-0598 5/21/98	RC-00-0598D 5/21/98	RC-CC-29-0598 5/21/98	RC-CC-59-0598 5/21/98	RC-CL-08-0598 5/21/98	RC-CL-16-0598 5/21/98
Benzene	0.18	0.22	0.13 U	1.23	0.61	0.61
Ethylbenzene	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Styrene	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U	0.58 U
Toluene	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Xylene (Total)	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U

Notes :

All units in µg/l.

U = Not Detected.

J = Estimated value.

TABLE 2
Summary of Analytical Results
for Samples Collected in Raccoon Creek

SAMPLE ID SAMPLE DATE	RC-CR-25-0598 5/21/98	RC-CR-51-0598 5/21/98	RC-DC-00-0598 5/21/98	RC-DC-27-0598 5/21/98	RC-DC-54-0598 5/21/98	RC-DL-10-0598 5/21/98
Benzene	1.70	4.00	0.25	0.22 J	0.36	0.75
Ethylbenzene	0.22 U	0.22 U	0.22 U	0.22 UJ	0.22 U	0.22 U
Styrene	0.58 U	0.58 U	0.58 U	0.58 UJ	0.58 U	0.58 U
Toluene	0.6 U	0.6 U	0.6 U	0.6 UJ	0.6 U	0.6 U
Xylene (Total)	0.22 U	0.22 U	0.22 U	0.22 UJ	0.22 U	0.22 U

Notes :

All units in µg/l.

U = Not Detected.

J = Estimated value.

TABLE 2
Summary of Analytical Results
for Samples Collected in Raccoon Creek

SAMPLE ID SAMPLE DATE	RC-DL-21-0598 5/21/98	RC-DR-31-0598 5/21/98	RC-DR-62-0598 5/21/98	RC-EC-00-0598 5/21/98	RC-EC-29-0598 5/21/98	RC-EC-58-0598 5/21/98
Benzene	1.01	0.50	0.13 U	0.70	0.64	0.60
Ethylbenzene	0.22 U					
Styrene	0.58 U					
Toluene	0.6 U					
Xylene (Total)	0.22 U					

Notes :

All units in µg/l.

U = Not Detected.

J = Estimated value.

TABLE 2
Summary of Analytical Results
for Samples Collected in Raccoon Creek

SAMPLE ID SAMPLE DATE	RC-EL-21-0598 5/21/98	RC-EL-42-0598 5/21/98	RC-ER-32-0598 5/21/98	RC-ER-64-0598 5/21/98	RC-TB-01-0598 5/21/98
Benzene	0.70	0.70	0.13 U	0.22	0.13 U
Ethylbenzene	0.22 U				
Styrene	0.58 U				
Toluene	0.6 U				
Xylene (Total)	0.22 U				

Notes :

All units in $\mu\text{g/l}$.

U = Not Detected.

J = Estimated value.

TABLE 3
Summary of Analytical Results of Benzene
July and October 1997 and February and May 1998

SAMPLE ID	CONCENTRATION (sampled 7/23/97)	CONCENTRATION (sampled 10/28/97)	CONCENTRATION (sampled 2/25/98)	CONCENTRATION (sampled 5/21/98)
Transect C				
RC-CC-00	0.15	0.13 U	0.34	0.18
RC-CC-00D	NA	NA	NA	0.22
RC-CC-29	NA	NA	NA	0.13 U
RC-CC-31	0.13 U	0.13 U	NA	NA
RC-CC-32	NA	NA	0.66	NA
RC-CC-59	NA	NA	NA	1.23
RC-CC-61	1.06	0.13 U	NA	NA
RC-CC-61D	1.12	NA	NA	NA
RC-CC-64	NA	NA	0.69	NA
RC-CL-08	NA	NA	0.13 U	0.61
RC-CL-16	NA	NA	0.13 U	0.61
RC-CL-20	0.15	0.25	NA	NA
RC-CL-39	1.08	0.39	NA	NA
RC-CL-39D	NA	0.38	NA	NA
RC-CR-25	NA	NA	NA	1.70
RC-CR-32	NA	NA	0.13 U	NA
RC-CR-34	0.13	0.13 U	NA	NA
RC-CR-51	NA	NA	NA	4.00
RC-CR-64	NA	NA	0.13 U	NA
RC-CR-67	0.13 U	0.13 U	NA	NA
RC-CRE-18	0.074	NA	NA	NA
RC-CRE-18D	0.41	NA	NA	NA
Transect D				
RC-DC-00	0.18	0.13 U	0.56	0.25
RC-DC-27	NA	NA	NA	0.22
RC-DC-30	0.15	0.13 U	0.35	NA
RC-DC-54	NA	NA	NA	0.36
RC-DC-60	0.41	0.13	0.46 J	NA
RC-DL-10	NA	NA	NA	0.75
RC-DL-15	0.22	0.13 U	NA	NA
RC-DL-17	NA	NA	0.13 U	NA
RC-DL-21	NA	NA	NA	1.01
RC-DL-32	0.24	0.13 U	NA	NA
RC-DL-34	NA	NA	0.13 U	NA
RC-DR-30	0.13	0.13 U	0.13 U	NA
RC-DR-31	NA	NA	NA	0.50
RC-DR-60	0.13 U	0.13 U	NA	NA
RC-DR-61	NA	NA	0.22	NA
RC-DR-62	NA	NA	NA	0.13 U
Transect E				
RC-EC-00	0.24	0.13 U	0.38	0.70
RC-EC-29	NA	NA	NA	0.64
RC-EC-30	0.18	0.13 U	NA	NA
RC-EC-33	NA	NA	0.49	NA
RC-EC-58	NA	NA	NA	0.60
RC-EC-60	0.46	0.13 U	NA	NA
RC-EC-60D	0.44	NA	NA	NA
RC-EC-66	NA	NA	0.30	NA
EC-EL-21	NA	NA	NA	0.70
EC-EL-27	NA	NA	0.13 U	NA
RC-EL-29	0.28	0.13 U	NA	NA
RC-EL-42	NA	NA	NA	0.70
RC-EL-54	NA	NA	0.13 U	NA
RC-EL-58	NA	0.13 U	NA	NA
RC-EL-59	0.81	NA	NA	NA
RC-ER-31	NA	NA	0.13 U	NA
RC-ER-32	NA	NA	NA	0.13 U
RC-ER-34	0.16	0.13 U	NA	NA
RC-ER-62	NA	NA	0.14	NA
RC-ER-64	NA	NA	NA	0.22
RC-ER-69	0.13 U	0.13 U	NA	NA
% of SAMPLES < 5 PPB¹				
	100	100	100	100

Notes:

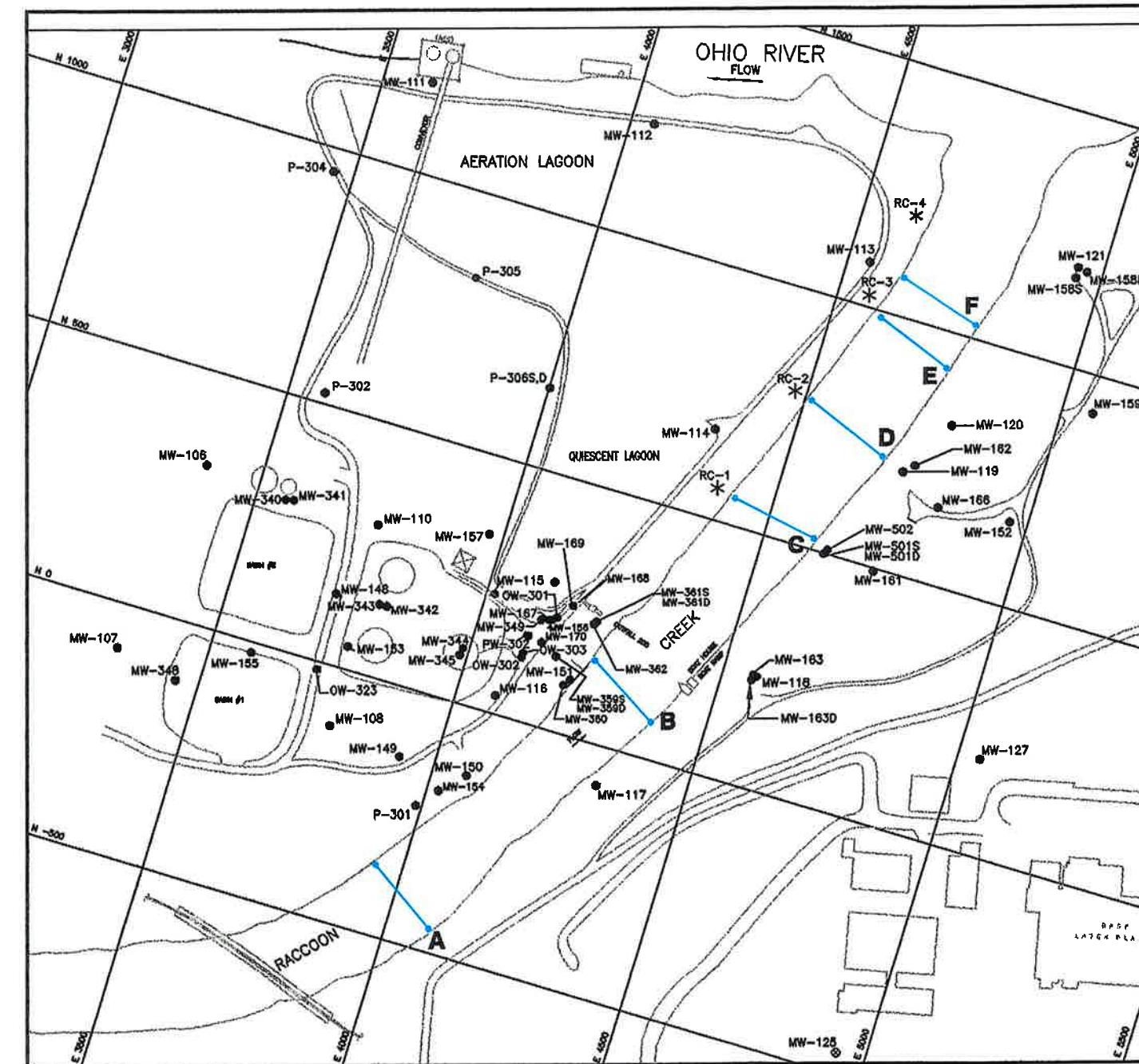
All units in µg/L

¹ Percentage of samples less than or equal to 5 PPB (µg/L)
 for attainment demonstration (Consent Order and Agreement, Oct. 1997).

U = Not Detected.

NA = Not Applicable

PLANT NORTH
TRUE NORTH
 $33^{\circ}36'25''$



LEGEND:

- MONITORING WELL
 - DRY WELL
 - * RC-1 - WELL POINT

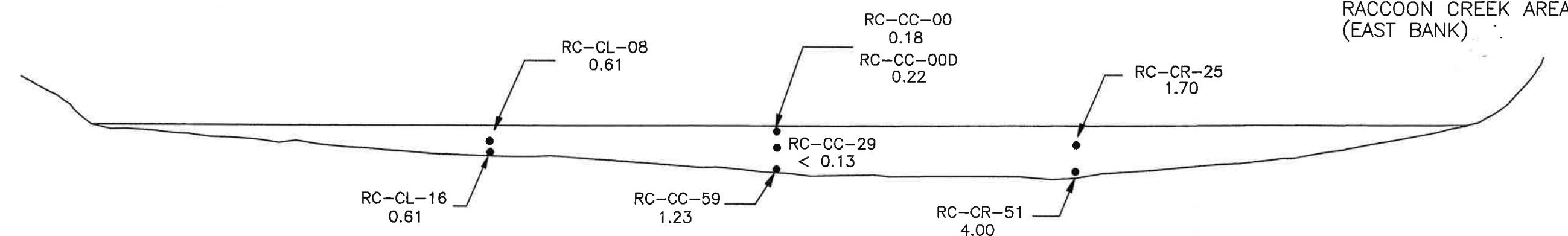
A horizontal scale bar with tick marks at 0, 150, and 300. Below it is the text "SCALE IN FEET".

FIGURE 1

ICF KAISER ENGINEERS		
SCALE: 1"=300'	APPROVED BY	DRAWN BY B. SNYDER
DATE: 8/8/98		CHECKED BY
TRANSECT LOCATION MAP		
ARCO CHEMICAL COMPANY BEAVER VALLEY, PA.	SHEET NUMBER	
	DRAWING NUMBER 66567E5C	

OVER THE HILL TANK FARM
AREA (WEST BANK)

RACCOON CREEK AREA
(EAST BANK)



LEGEND:

- SURFACE WATER SAMPLE LOCATION

ALL CONCENTRATIONS IN ug/l
OR PARTS PER BILLION

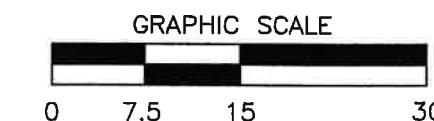


FIGURE 2

ARCO CHEMICAL COMPANY RACCOON CREEK INVESTIGATION BEAVER VALLEY PLANT	RACCOON CREEK TRANSECT C SURFACE WATER BENZENE CONCENTRATIONS	
ICF KAISER ENGINEERS PITTSBURGH, PA	DATE: 6/8/98	DR.: M. WILLIAMS

SCALE: 1"=15' DWG. NO. 20153024

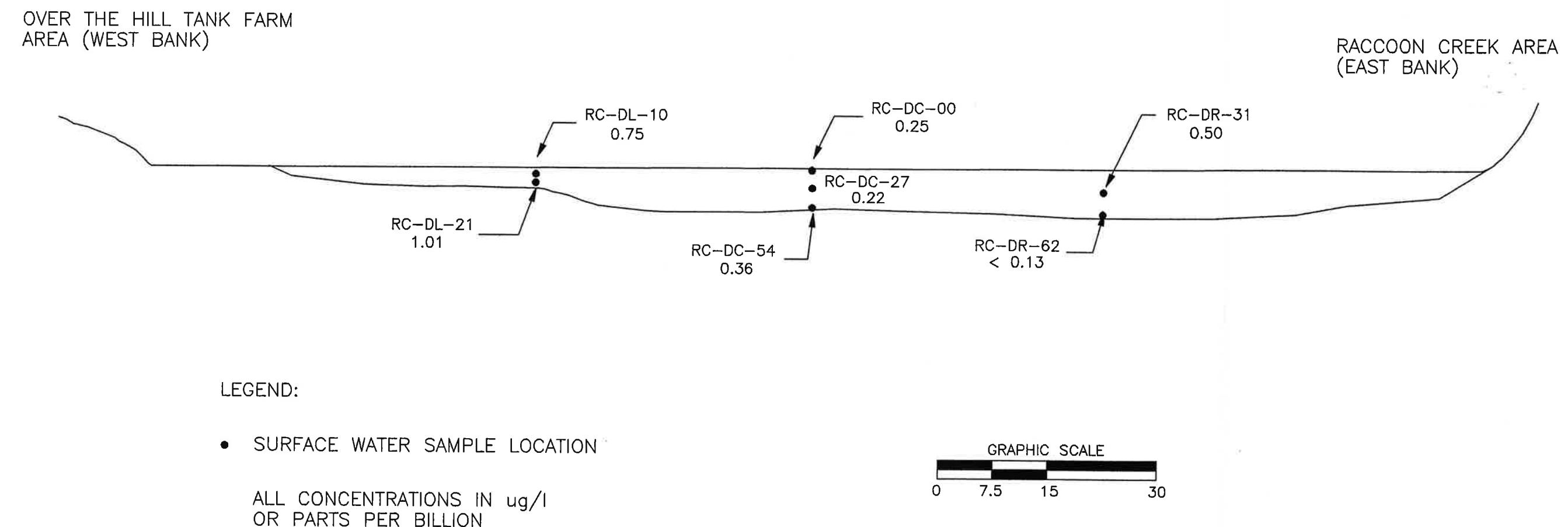
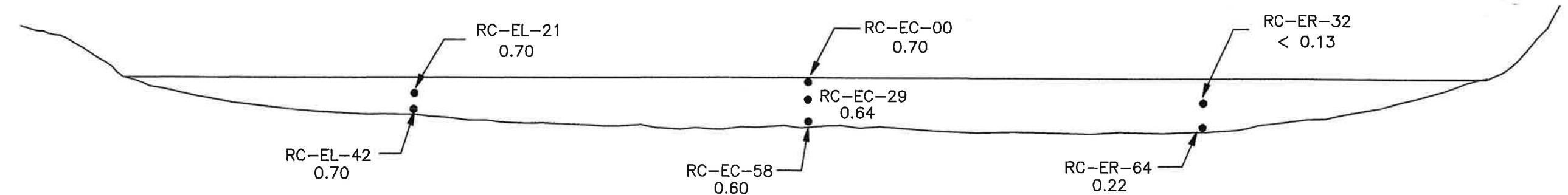


FIGURE 3

ARCO CHEMICAL COMPANY RACCOON CREEK INVESTIGATION BEAVER VALLEY PLANT	RACCOON CREEK TRANSECT D SURFACE WATER BENZENE CONCENTRATIONS
ICF KAISER ENGINEERS PITTSBURGH, PA	DATE: 6/8/98 DR.: M. WILLIAMS SCALE: 1"=15' DWG. NO. 20153023

OVER THE HILL TANK FARM
AREA (WEST BANK)

RACCOON CREEK AREA
(EAST BANK)



LEGEND

- SURFACE WATER SAMPLE LOCATION

ALL CONCENTRATIONS IN ug/
OR PARTS PER BILLION

GRAPHIC SCALI

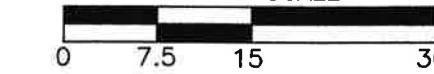


FIGURE 4

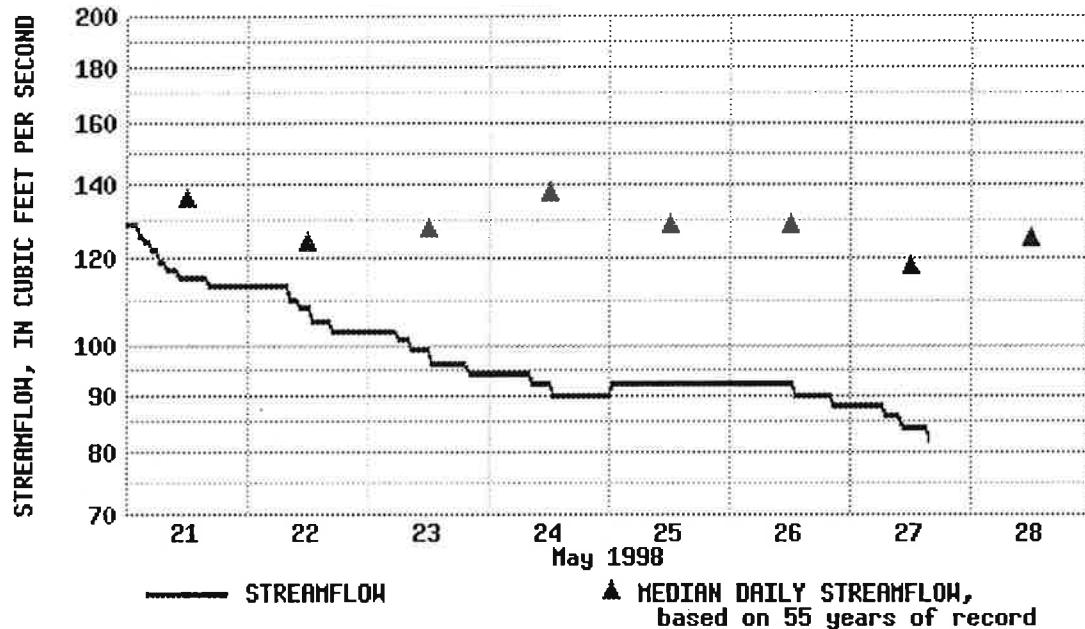
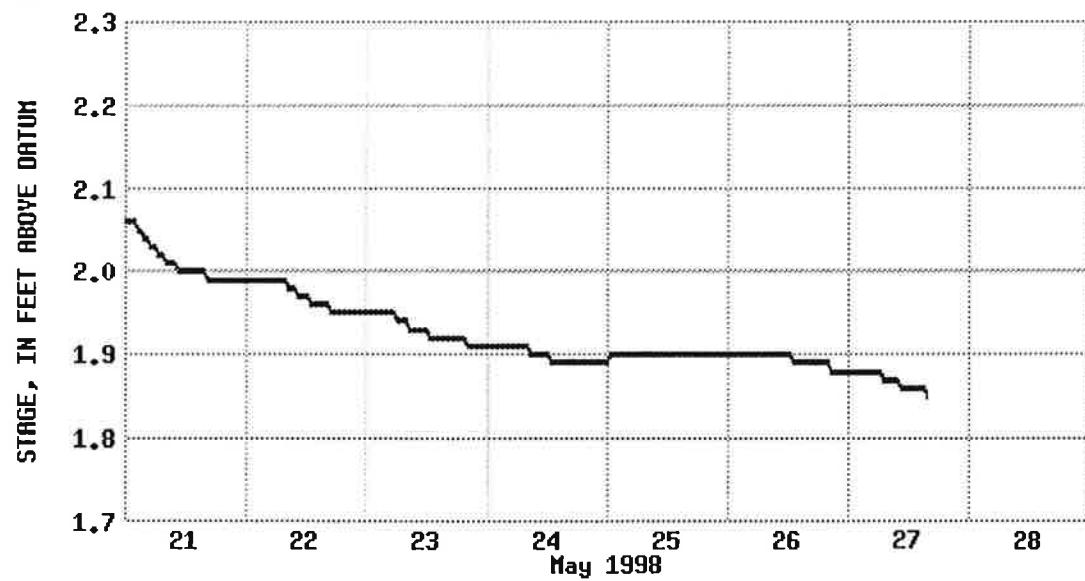
ARCO CHEMICAL COMPANY RACCOON CREEK INVESTIGATION BEAVER VALLEY PLANT	RACCOON CREEK TRANSECT E SURFACE WATER BENZENE CONCENTRATIONS
<i>ICF KAISER ENGINEERS</i> PITTSBURGH, PA	DATE: 6/8/98 DR.: M. WILLIAMS SCALE: 1"=15' DWG. NO. 20153022

APPENDIX A

**PERSONAL DATA FROM
USGS MOFFATTS MILL G.S.**

**PROVISIONAL DATA SUBJECT TO REVISION****03108000-- RACCOON CREEK AT MOFFATTS MILL, PA****Current Conditions**

Flow (ft³/s)	Stage (ft)	Date	Time
82	1.85	05/27	16:00

Streamflow -- updated Wed May 27 16:00 1998 -- [download presentation-quality graph](#)Stage -- updated Wed May 27 16:00 1998 -- [download presentation-quality graph](#) [Data used in graph](#)

APPENDIX B

CHAIN-OF-CUSTODY

ICF KAISER

7096

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME			NO. OF CON- TAINERS	REMARKS
10507	Arco Monaca				
SAMPLERS: (Signature)	Rob Grousey / Joe Auer				R-6050
STA. NO.	DATE	TIME	COMP	GRAB	
ROER-4	5/21	0935	X		
-05918					1
ROEC-32	1	0940	X		2
-05918					
ROEC-58					3
-05918					
ROEC-29		1010	X		
-05918					
ROEC-00					4
-05918					
ROEC-00		1015	X		
-05918					
ROEC-00		1020	X		
-05918					
ROEC-47					5
-05918					
ROEC-00		1030	X		
-05918					
ROEC-21					6
-05918					
ROEC-21		1035	X		
-05918					
RODR-42					7
-05918					
RODR-42		1105	X		
-05918					
RODR-31					8
-05918					
RODR-31		1110	X		
-05918					
RODR-54					9
-05918					
RODR-54		1120	X		
-05918					
RODR-67					10
-05918					
RODR-67		1125	X		
-05918					
RODR-00					11
-05918					
RODR-00		1130	X		
-05918					
RODR-21					
-05918					
RODR-21		1145	X		
-05918					
RODR-10					
-05918					
RODR-10		1150	X		
-05918					
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	5-21-98	1445	Rob Grousey	5/22/98 1000	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

ICE KAISER

7097

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME			NO. OF CONTAINERS	REMARKS
STA. NO.	DATE	TIME	COMP		
RCCR-51	5/21	1255	X	3	X
-0518					
RCCR-25	1300	XX		3	X
-0518					
RCCR-00	1245	XX		3	X
-0518					
RCCR-51	1235	X		3	X
-0518					
RCCR-29	1240	X		3	X
-0518					
RCCR-00	1245	X		3	X
-0518					
RCCR-14	1205	X		3	X
-0518					
RCCR-00	1210	X		3	X
-0518					
RCTR-00				3	X
-0518					

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	5-21-98 1445	5/22/98 1000			
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

APPENDIX C

LABORATORY REPORTS

RELIANCE
LABORATORIES, INC.



175 MAY STREET, EDISON, NJ 08837 PH (732) 738-5454 FAX (732) 738-5841
EMAIL: 74201.3501@COMPUERVE.COM

ANALYTICAL REPORT

For
Arco Chemical Company
Pittsburgh, PA 15219

Project: Arco Beazer / Monaca

RELIANCE
LABORATORIES, INC.



175 MAY STREET, EDISON, NJ 08837 PH (732) 738-5454 FAX (732) 738-5841
EMAIL: 74201.3501@COMPUERVE.COM

ANALYTICAL DATA REPORT

for
Arco Chemical Company
Pittsburgh, PA 15219
Project: Arco Beazer / Monaca

Date Received: 5/22/98

Sample ID	Lab ID #
RC-ER-64-0598	R-6050.1
RC-ER-32-0598	R-6050.2
RC-EC-58-0598	R-6050.3
RC-EC-29-0598	R-6050.4
RC-EC-00-0598	R-6050.5
RC-EL-42-0598	R-6050.6
RC-EL-21-0598	R-6050.7
RC-DR-62-0598	R-6050.8
RC-DR-31-0598	R-6050.9
RC-DC-54-0598	R-6050.10
RC-DC-27-0598	R-6050.11
RC-DC-00-0598	R-6050.12
RC-DL-21-0598	R-6050.13
RC-DL-10-0598	R-6050.14
RC-CR-51-0598	R-6050.15
RC-CR-25-0598	R-6050.16
RC-CC-00-0598D	R-6050.17
RC-CC-59-0598	R-6050.18
RC-CC-29-0598	R-6050.19
RC-CC-00-0598	R-6050.20
RC-CL-16-0598	R-6050.21
RC-CL-08-0598	R-6050.22
RC-TB-01-0598	R-6050.23

These samples have been analyzed by EPA method 524.2 for a selected compound list.
The results are not designed for uses for drinking water purposes.

G.P.Kirpalani
G. P. Kirpalani
Manager

**RELIANCE
LABORATORIES INC.**



175 MAY STREET, EDISON, NJ 08837 PH (732) 738-5454 FAX (732) 738-5841
EMAIL: 74201.3501@COMPUERVE.COM

TABLE OF CONTENTS

Laboratory Chronicle	page 1
Non-Conformance Summary	page 2
Methodology Summary	page 3
Analytical Results	page 5
QA/QC Data	page 7
Laboratory Certificate	page 88
Chain of Custody	page 89

RELIANCE
LABORATORIES, INC.



175 MAY STREET, EDISON, NJ 08837 PH (732) 738-5454 FAX (732) 738-5841
EMAIL: 74201.3501@COMPUERVE.COM

LABORATORY CHRONICLE

Customer Name Arco Chemical Company

Date Received: 5/22/98

Date Sampled: 5/21/98

Sample ID: As per chain of custody

Organic Extraction:

- 1 Acids _____
2 Base / Neutrals _____
3 Pesticides/PCB's _____
4 TPHC _____

Analysis:

- 1 Volatiles 5/22/98 5/23/98 5/26/98
2 Acids _____
3 Base/Neutrals _____
4 Pesticides/PCB's _____
5 TPHC _____

Inorganics:

- 1 Metals _____
2 Cyanides _____
3 Phenols _____

Other Analysis:

Supervisor _____
Review & Approval _____ *H.P. Kurpalani*

RELIANCE
LABORATORIES INC.



3090 WOODBRIDGE AVENUE, EDISON NJ 08837 PH (908) 738-5454 FAX (908) 738-5841

NON-CONFORMANCE SUMMARY

Reliance Labs received 23 water samples for BTEXS by method 524.2 from Arco/ICF Kaiser on 22 May 1998. Samples consisted of 69 vials including trip blank.

Matrix spike recovery analysis was performed on samples and results are attached.

All analyses were performed within the required holding time.

Samples R-6050.15 & 16 were analyzed using 10ml and 20mL sample size.

STANDARD OPERATING PROCEDURE
METHOD 524.2

1. Scope

This is the general method for the procedure used to identify purgeable volatile organics in portable water. The sample is purged with ultra high purity helium and concentrated into a trap. The volatiles are then thermally desorbed onto a megabore column and identified using a mass spectrometer detector.

2. Equipment and Apparatus

- A. Sample containers- 40ml screw caps amber vials.
- B. Purge and Trap System.
 - 1. 25cm VOCARB 3000 trap.
- C. Glassware
 - 1. 20 ml fritted purging vessels.
 - 2. 25 ml teflon sealed syringe with lever lock assembly.
 - 3. 10 μ L syringes.
- D. Gas Chromographic / Mass Spectrometer.
 - 1. Column type J&W
75 m, 0.53 mm ID, DB624 3 microns

E. Apparatus Conditions

- 1. Tekmar (purge and trap)
 - a. Purge time : 2 min.
 - b. Desorb time and temp. : 250° for 2 min.
 - c. Bake time and temp. : 260° for 12 min.
 - d. Flow rate : 15 cc/min.
- 2. GC Conditions
 - a. Column flow : 15 cc/min.
 - b. Initial temp. : 35° C
 - c. Ramping Rate : 6° C/min.
 - d. Final temp. : 200° C
 - e. Run time : 47.25 min.
 - f. Initial time : 6 min.

3. Stock Standards

- A. Internal Standard
 - 1. Flourobenzene
- B. Surrogates
 - 1. 1,2-dichlorobenzene-d4
 - 2. 4-bromofluorobenzene
- C. Prepare standard solutions for all target compounds and surrogates at 20 ppm.
- D. Prepare internal standard at 20 ppm in methanol.
 - 1. Prepare all standards and store in teflon sealed 1 ml vials.

- 4. Run Sequence**
 - A. Tune Instrument**
 1. Inject 1 μ L of 25 ppm BFB into GC.
 - a. Tune must pass against criteria.
 - b. Tune must be run before any samples, blank or calibrations can be run.
 - c. From time to tune 12 hours are available to run all QC data and samples.
 - B. Three Point Calibration Curve**
 1. Purge five (3) concentrations of standard solutions containing all the target analysis at 1 ppb, 2 ppb, 5 ppb.
 2. The above standard must be run within 12 hours of injecting the BFB tune.
 3. Create a calibration curve with the above standard runs.
 - a. If the 30% RSD deviation is exceeded the standards must be run again (still within 12 hours)
 4. Create an identification file from this calibration curve for automated quantification.
 - C. If time remains in the 12-hour run period go to step F.**
 - D. If the 12-hour period has expired, a new tune must be injected and a new sequence must be started.**
 - E. Once an initial calibration curve is established a continuing calibrations check may be run. A continuing calibration check is required every time the mass spectrometer is tuned.**
 1. 2 ppb concentration of all target compounds is purged and quanted against current ID file.
 2. Check the response factors of this run against the average RF of the calibration file. The RF of the continuing calibration must be within \pm 50% D (difference) of the 5 point for all compounds.
 3. The area counts of internal standard and surrogates must not be decreased by >30% from the most recent continuing calibration standard nor decrease by >50% from the initial calibration standard.
 - F. Daily Blank**
 1. Purge 20 ml of laboratory reagent water (nanopure) with 5 ppb internal standard and 5 ppb each surrogate.
 2. Run this blank and quant against current ID file.
 3. If blank does not meet criteria, it must be rerun before analyzing any samples.
 - G. Samples**
 1. Fill 25 ml syringe until it overflows with sample. Then adjust the volume to 20 ml exactly.
 2. Inject 5 μ L each 25 ppm internal standard and surrogate standard solution into each sample.
 3. Run and quant against the current 5 point calibration curves.
 4. Any sample with target compound over 5 ppb must be rerun at the appropriate dilution.
 5. Any sample not injected in 12-hour period must be rerun.
 - H. Quality Control Sample (QCS)**
 1. Analyze a QCS from an external source at least quarterly.

R E L I A N C E
LABORATORIES INC.



175 MAY STREET, EDISON, NJ 08837 PH (908) 738-5454 FAX (908) 738-5841
EMAIL : 74201.3501@COMPUSERVE.COM

LABORATORY ID
NJ DEP NO. 12687
PA DER NO. 68437

CERTIFICATE OF ANALYSIS

Customer: ICF Kaiser / Arco Chemical
Sample: Aqueous Samples
Date Sampled: 21 May 1998
Lab ID: R-6050
Reference: Arco Beazer/Monaca

29 May 1998

Units: $\mu\text{g/L}$

Sample ID	Benzene	Toluene	Ethylbenzene	Xylene	Styrene
RC-ER-64-0598	0.22	< 0.6	< 0.22	< 0.22	< 0.58
RC-ER-32-0598	< 0.13	< 0.6	< 0.22	< 0.22	< 0.58
RC-EC-58-0598	0.60	< 0.6	< 0.22	< 0.22	< 0.58
RC-EC-29-0598	0.64	< 0.6	< 0.22	< 0.22	< 0.58
RC-EC-00-0598	0.70	< 0.6	< 0.22	< 0.22	< 0.58
RC-EL-42-0598	0.70	< 0.6	< 0.22	< 0.22	< 0.58
RC-EL-21-0598	0.70	< 0.6	< 0.22	< 0.22	< 0.58
RC-DR-62-0598	< 0.13	< 0.6	< 0.22	< 0.22	< 0.58
RC-DR-31-0598	0.50	< 0.6	< 0.22	< 0.22	< 0.58
RC-DC-54-0598	0.36	< 0.6	< 0.22	< 0.22	< 0.58
RC-DC-27-0598	0.22	< 0.6	< 0.22	< 0.22	< 0.58
RC-DC-00-0598	0.25	< 0.6	< 0.22	< 0.22	< 0.58
RC-DL-21-0598	1.01	< 0.6	< 0.22	< 0.22	< 0.58
RC-DL-10-0598	0.75	< 0.6	< 0.22	< 0.22	< 0.58
RC-CR-51-0598	4.00	< 0.6	< 0.22	< 0.22	< 0.58
RC-CR-25-0598	1.70	< 0.6	< 0.22	< 0.22	< 0.58
RC-CC-00-0598D	0.22	< 0.6	< 0.22	< 0.22	< 0.58
RC-CC-59-0598	1.23	< 0.6	< 0.22	< 0.22	< 0.58
RC-CC-29-0598	< 0.13	< 0.6	< 0.22	< 0.22	< 0.58
RC-CC-00-0598	0.18	< 0.6	< 0.22	< 0.22	< 0.58
RC-CL-16-0598	0.61	< 0.6	< 0.22	< 0.22	< 0.58
RC-CL-08-0598	0.61	< 0.6	< 0.22	< 0.22	< 0.58
RC-TB-01-0598	< 0.13	< 0.6	< 0.22	< 0.22	< 0.58

G. P. Kirpalani
Manager

R E L I A N C E
LABORATORIES INC.



175 MAY STREET, EDISON, NJ 08837 PH (908) 738-5454 FAX (908) 738-5841
EMAIL : 74201.3501@COMPUERVE.COM

LABORATORY ID

NJ DEP NO. 12687
PA DER NO. 68437

CERTIFICATE OF ANALYSIS

Customer: ICF Kaiser / Arco Chemical
Sample: Aqueous Samples
Date Sampled: 21 May 1998
Lab ID: R-6050
Reference: Arco Beazer/Monaca (Duplicate Analysis)

29 May 1998

Units: $\mu\text{g/L}$

Sample ID	Benzene	Toluene	Ethylbenzene	Xylene	Styrene
RC-EL-42-0598	0.69	< 0.6	< 0.22	< 0.22	< 0.58
RC-EL-21-0598	0.72	< 0.6	< 0.22	< 0.22	< 0.58
RC-CR-51-0598	3.61	< 0.6	< 0.22	< 0.22	< 0.58
RC-CR-25-0598	1.49	< 0.6	< 0.22	< 0.22	< 0.58
RC-CC-59-0598	1.24	< 0.6	< 0.22	< 0.22	< 0.58

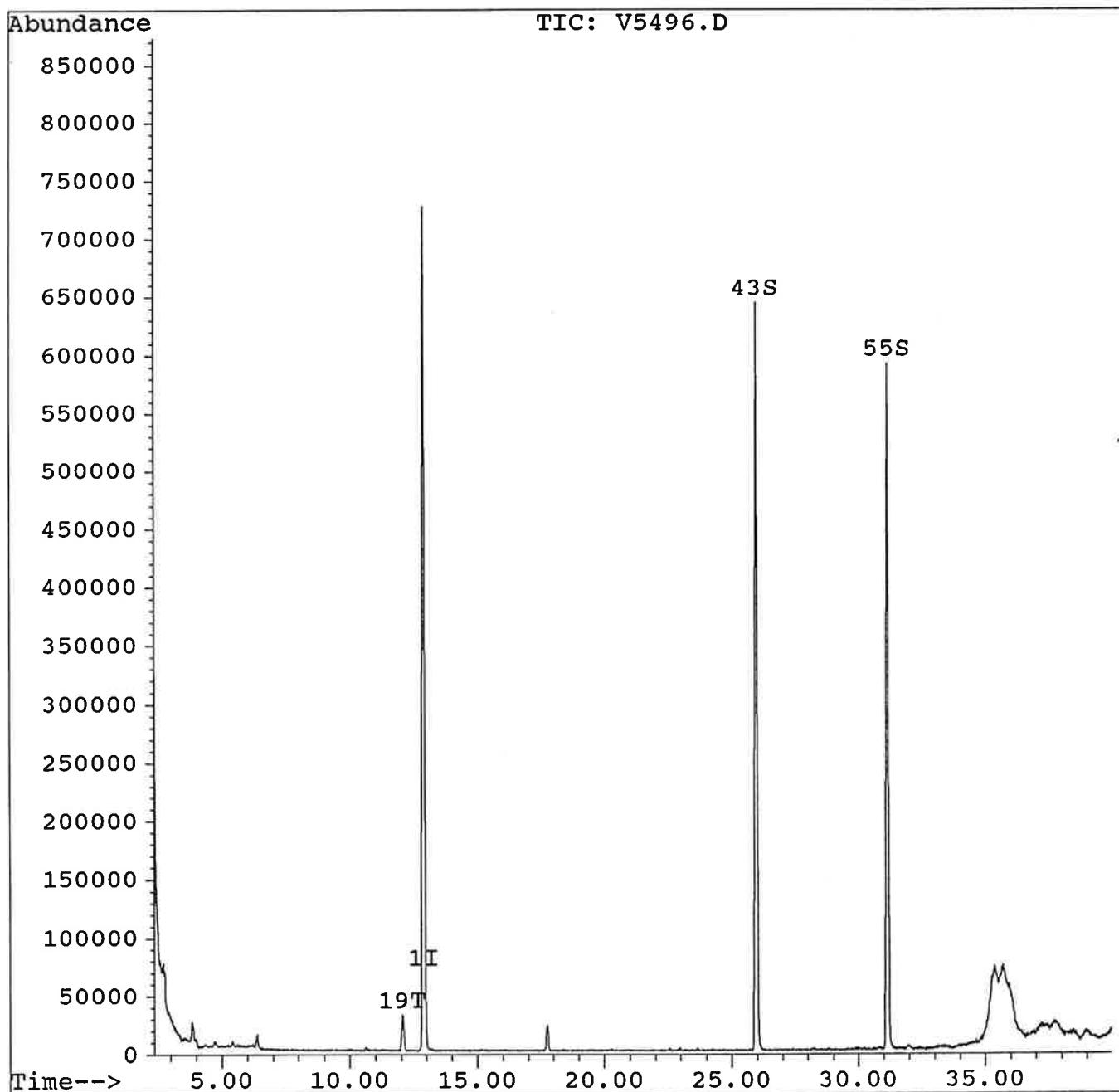
G. P. Kirpalani
Manager

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5496.D
Acq On : 22 May 98 1:53 pm
Sample : R-6050.1
Misc : ICF Kaiser - Arco - RCER-64-0598
Quant Time: May 27 10:39 1998

Vial: 9
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5497.D
 Acq On : 22 May 98 2:40 pm
 Sample : R-6050.2
 Misc : ICF Kaiser - Arco - RCER-32-0598
 Quant Time: May 23 11:45 1998

Vial: 10
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.89	96	2221482	5.00	ug/L	0.00
System Monitoring Compounds						
43) 4-bromofluorobenzene	25.96	95	860633	5.14	ug/L	102.71%
55) 1,2-dichlorobenzene-d4	31.14	152	565681	5.06	ug/L	101.24%
Target Compounds						
						%Recovery
						Qvalue

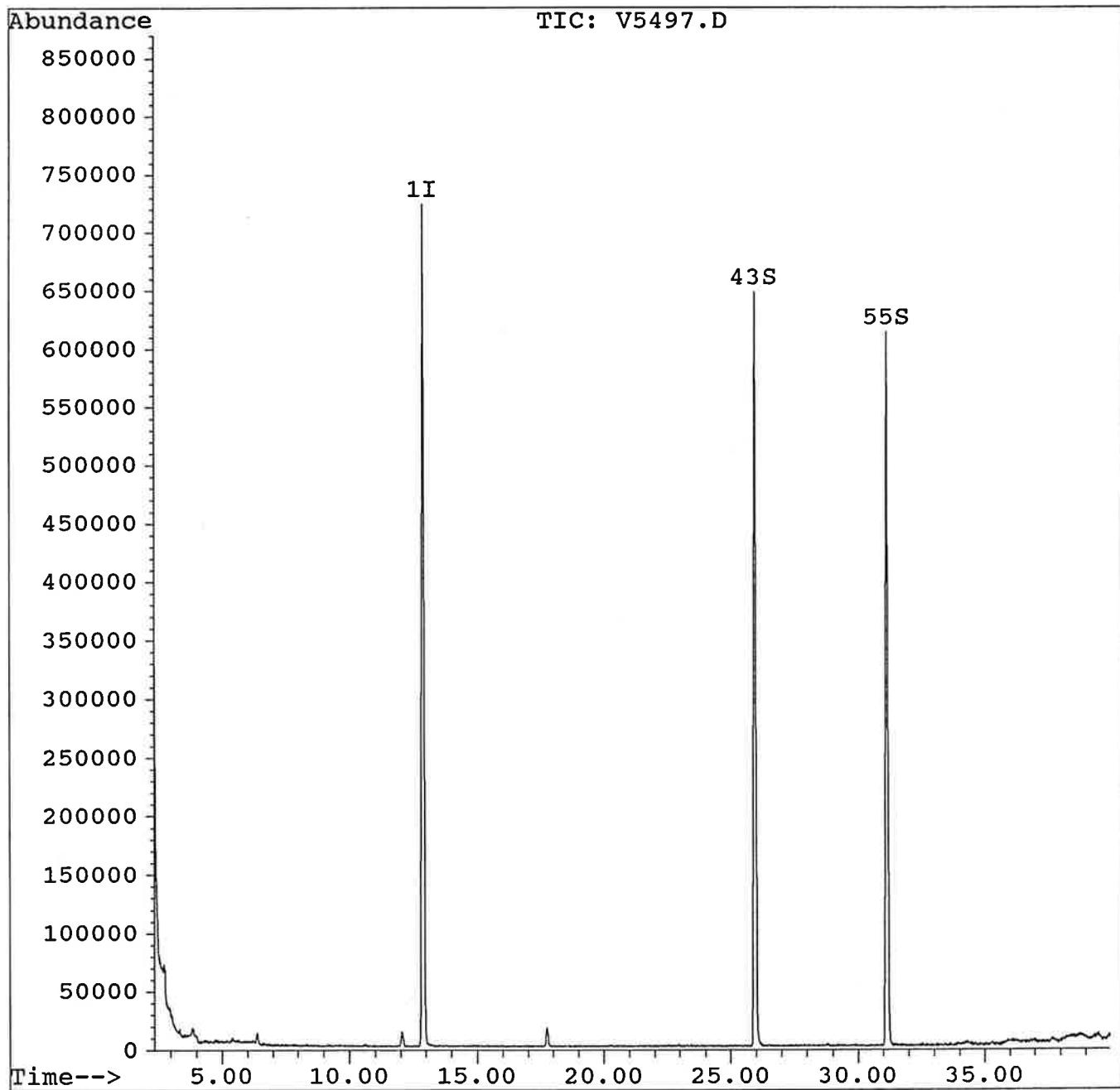
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 V5497.D RUN524.M Wed May 27 10:40:09 1998

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5497.D
Acq On : 22 May 98 2:40 pm
Sample : R-6050.2
Misc : ICF Kaiser - Arco - RCER-32-0598
Quant Time: May 23 11:45 1998

Vial: 10
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5498.D
 Acq On : 22 May 98 3:28 pm
 Sample : R-6050.3
 Misc : ICF Kaiser - Arco - RCEC-58-0598
 Quant Time: May 27 10:39 1998

Vial: 11
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.88	96	2174379	5.00	ug/L	0.00
System Monitoring Compounds					%Recovery	
43) 4-bromofluorobenzene	25.95	95	848497	5.17	ug/L	103.45%
55) 1,2-dichlorobenzene-d4	31.14	152	555697	5.08	ug/L	101.61%
Target Compounds					Qvalue	
19) Benzene	12.06	78	250038	0.60	ug/L	100

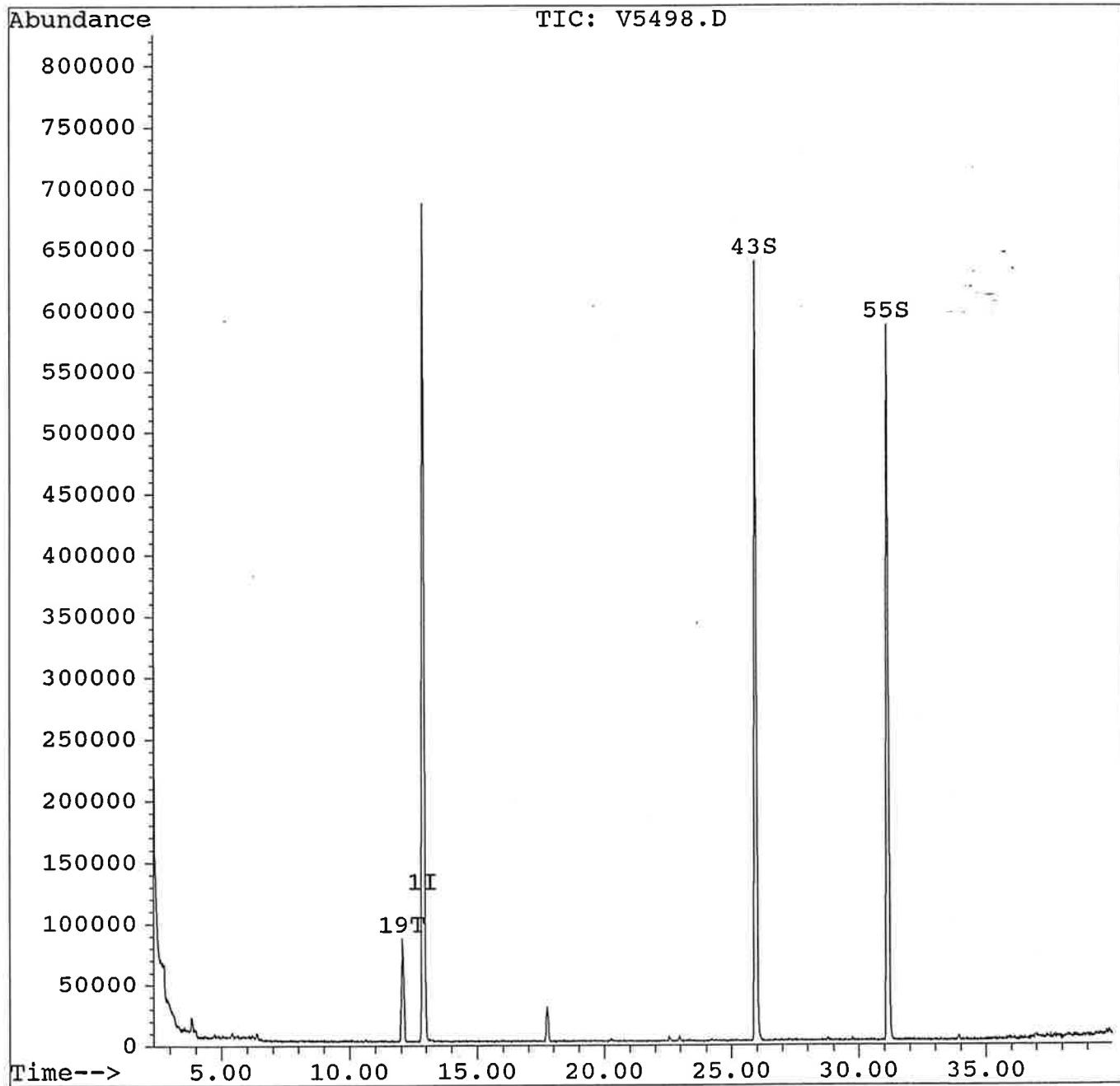
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 V5498.D RUN524.M Wed May 27 10:39:53 1998

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5498.D
Acq On : 22 May 98 3:28 pm
Sample : R-6050.3
Misc : ICF Kaiser - Arco - RCEC-58-0598
Quant Time: May 27 10:39 1998

Vial: 11
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5499.D
 Acq On : 22 May 98 4:15 pm
 Sample : R-6050.4
 Misc : ICF Kaiser - Arco - RCEC-29-0598
 Quant Time: May 23 11:45 1998

Vial: 12
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.89	96	2256714	5.00	ug/L	0.00
System Monitoring Compounds						
43) 4-bromofluorobenzene	25.96	95	860356	5.05	ug/L	101.07%
55) 1,2-dichlorobenzene-d4	31.15	152	563523	4.96	ug/L	99.28%
Target Compounds						
19) Benzene	12.06	78	277735	0.64	ug/L	98

(#) = qualifier out of range (m) = manual integration
 V5499.D RUN524.M Wed May 27 10:40:26 1998

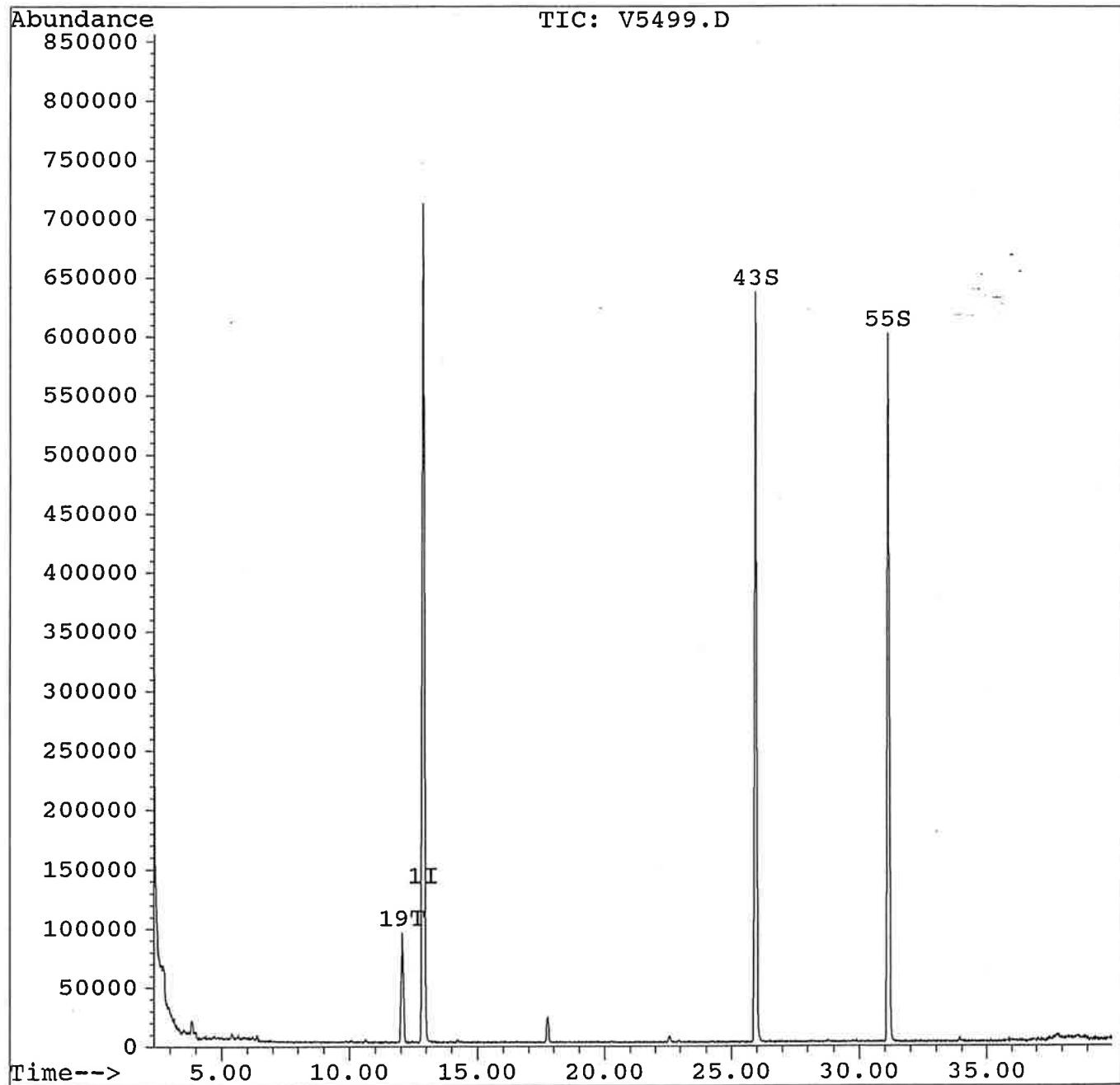
Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5499.D
Acq On : 22 May 98 4:15 pm
Sample : R-6050.4
Misc : ICF Kaiser - Arco - RCEC-29-0598
Quant Time: May 23 11:45 1998

Vial: 12
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5500.D
 Acq On : 22 May 98 5:03 pm
 Sample : R-6050.5
 Misc : ICF Kaiser - Arco - RCEC-00-0598
 Quant Time: May 27 10:40 1998

Vial: 13
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

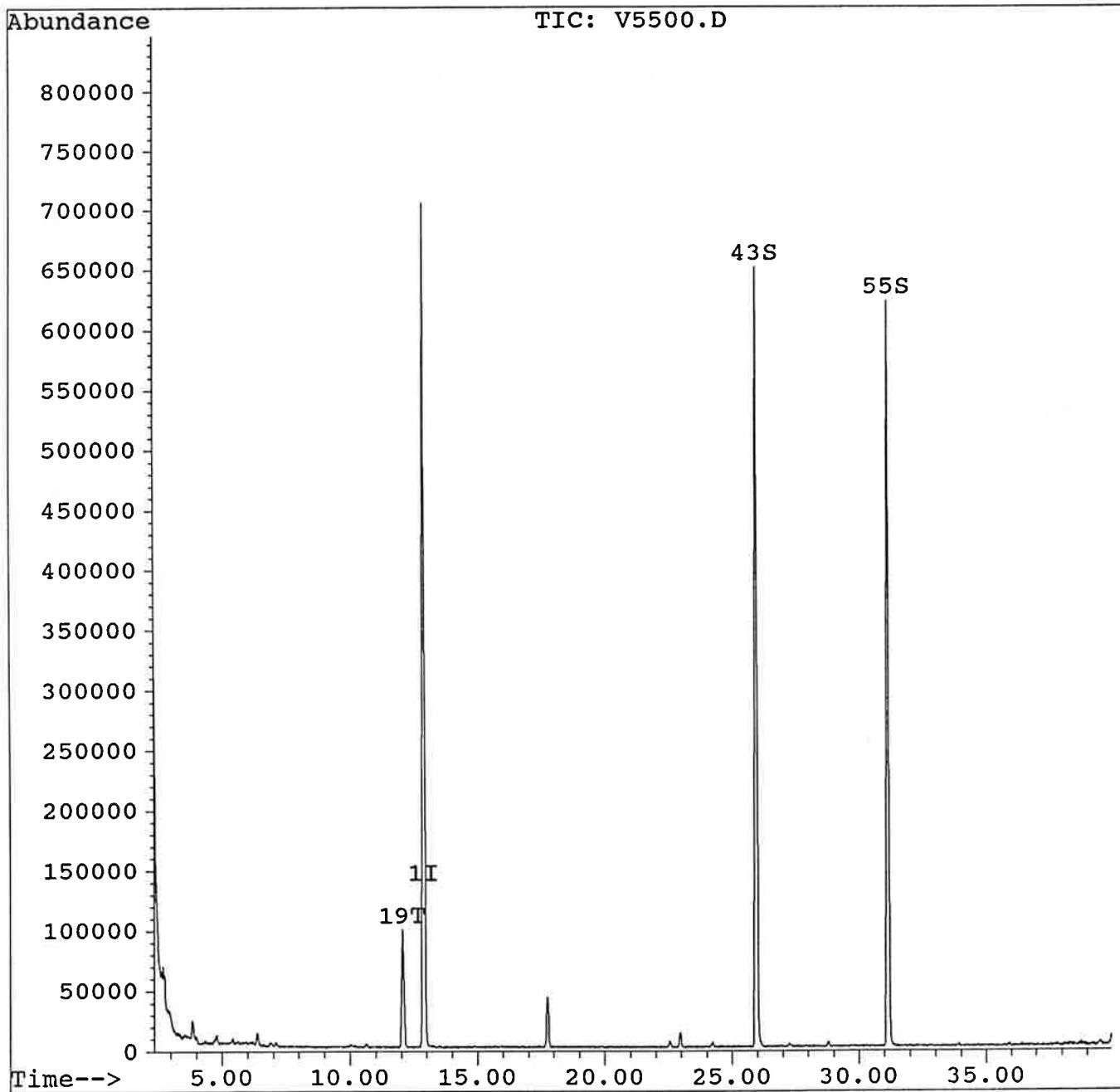
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.89	96	2169738	5.00	ug/L	0.00
System Monitoring Compounds						
43) 4-bromofluorobenzene	25.96	95	874465	5.34	ug/L	106.85%
55) 1,2-dichlorobenzene-d4	31.15	152	574485	5.26	ug/L	105.27%
Target Compounds						
19) Benzene	12.06	78	292021	0.70	ug/L	95

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5500.D
Acq On : 22 May 98 5:03 pm
Sample : R-6050.5
Misc : ICF Kaiser - Arco - RCEC-00-0598
Quant Time: May 27 10:40 1998

Vial: 13
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5501.D
 Acq On : 22 May 98 5:50 pm
 Sample : R-6050.6
 Misc : ICF Kaiser - Arco - RCEL-42-0598
 Quant Time: May 27 10:41 1998

Vial: 14
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.88	96	2217190	5.00	ug/L	0.00
System Monitoring Compounds						
43) 4-bromofluorobenzene	25.95	95	828866	4.96	ug/L	99.11%
55) 1,2-dichlorobenzene-d4	31.14	152	555454	4.98	ug/L	99.60%
Target Compounds						
19) Benzene	12.05	78	294961	0.70	ug/L	98

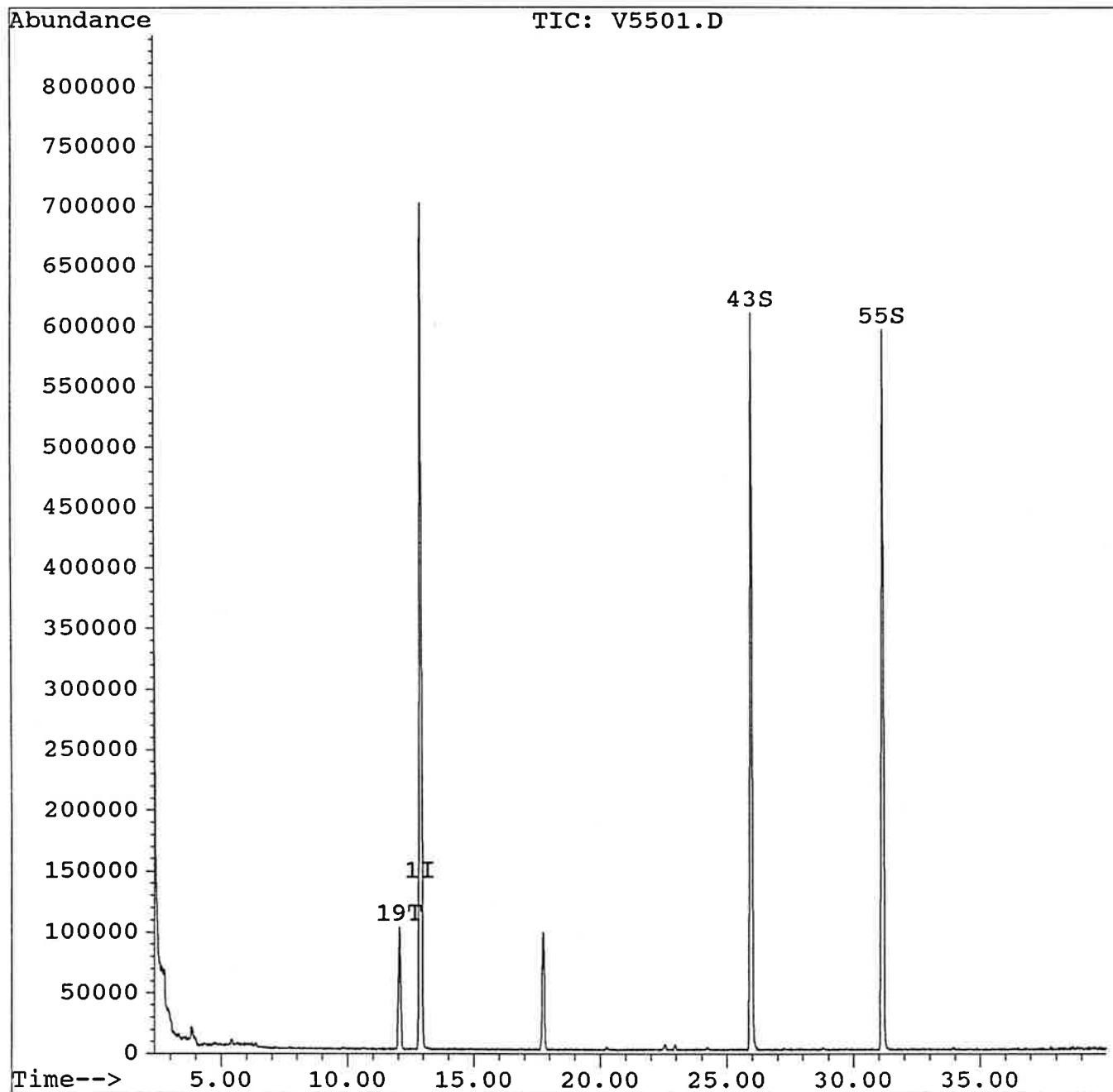
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 V5501.D RUN524.M Wed May 27 10:42:11 1998

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5501.D
Acq On : 22 May 98 5:50 pm
Sample : R-6050.6
Misc : ICF Kaiser - Arco - RCEL-42-0598
Quant Time: May 27 10:41 1998

Vial: 14
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5525.D
 Acq On : 26 May 98 12:51 pm
 Sample : R-6050.6 Dup.
 Misc : ICF Kaiser - Arco - RC-EL-42-0598
 Quant Time: May 27 10:52 1998

Vial: 9
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

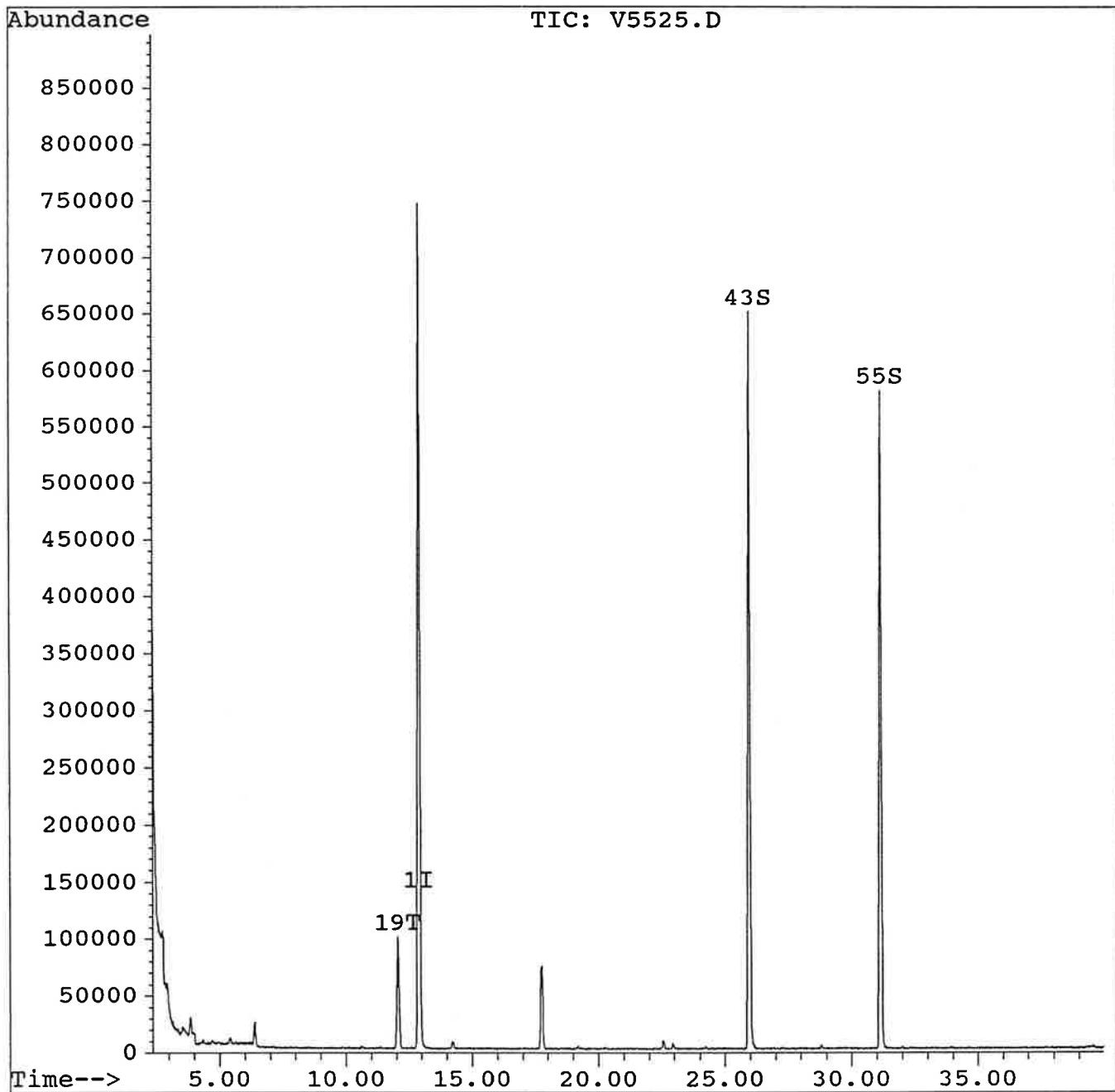
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.89	96	2287821	5.00	ug/L	0.00
System Monitoring Compounds						
43) 4-bromofluorobenzene	25.95	95	849593	4.92	ug/L	98.45%
55) 1,2-dichlorobenzene-d4	31.14	152	552072	4.80	ug/L	95.94%
Target Compounds						
19) Benzene	12.05	78	302530	0.69	ug/L	100

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5525.D
Acq On : 26 May 98 12:51 pm
Sample : R-6050.6 Dup.
Misc : ICF Kaiser - Arco - RC-EL-42-0598
Quant Time: May 27 10:52 1998

Vial: 9
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5502.D
 Acq On : 22 May 98 6:37 pm
 Sample : R-6050.7
 Misc : ICF Kaiser - Arco - RCEL-21-0598
 Quant Time: May 27 10:42 1998

Vial: 15
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

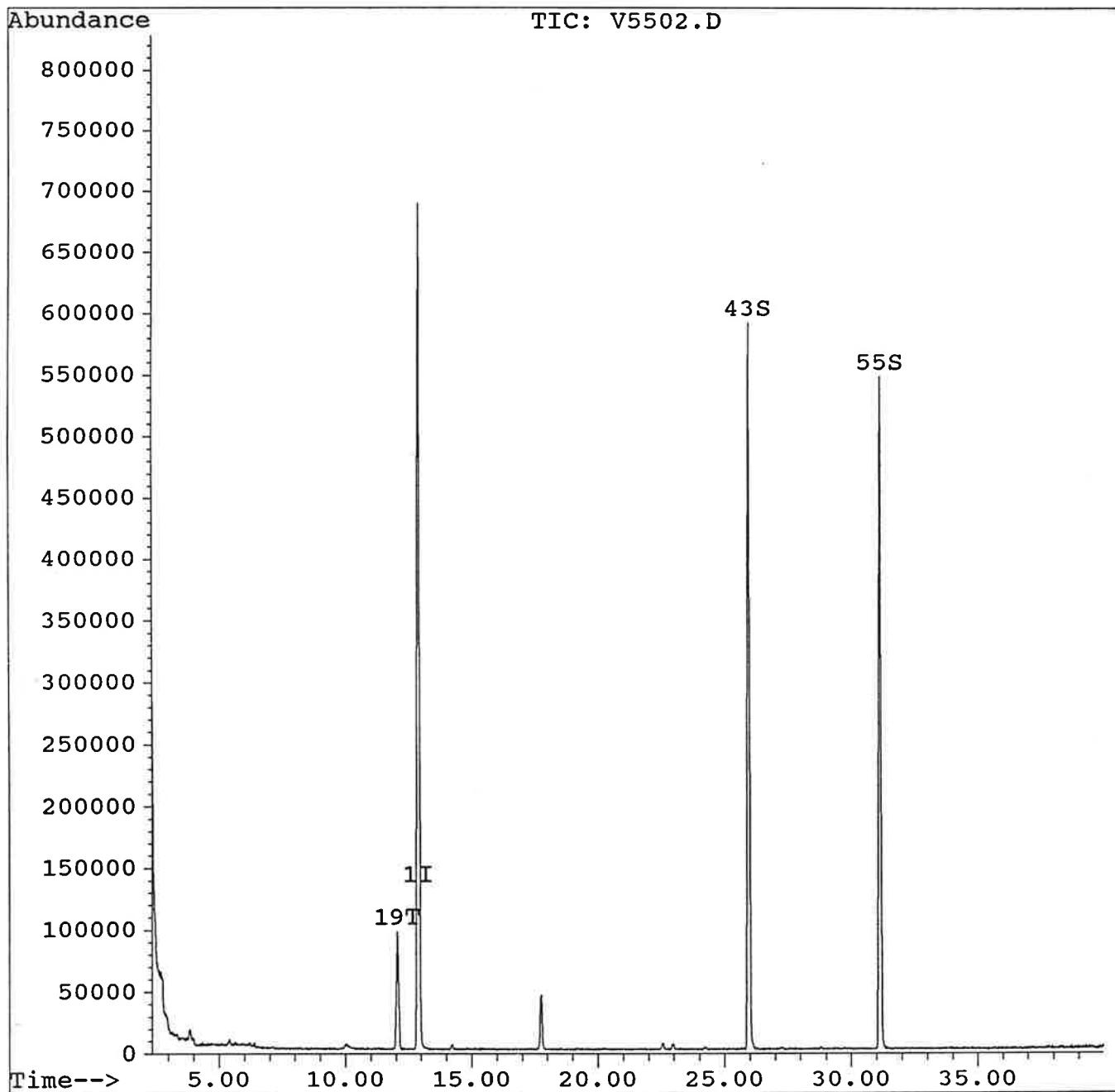
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.89	96	2137597	5.00	ug/L	0.00
System Monitoring Compounds					%Recovery	
43) 4-bromofluorobenzene	25.96	95	792954	4.92	ug/L	98.35%
55) 1,2-dichlorobenzene-d4	31.15	152	525821	4.89	ug/L	97.80%
Target Compounds					Qvalue	
19) Benzene	12.05	78	284938	0.70	ug/L	100

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5502.D
Acq On : 22 May 98 6:37 pm
Sample : R-6050.7
Misc : ICF Kaiser - Arco - RCEL-21-0598
Quant Time: May 27 10:42 1998

Vial: 15
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5529.D
 Acq On : 26 May 98 4:02 pm
 Sample : R-6050.7 Dup
 Misc : ICF Kaiser - Arco - RC-EL-21-0598
 Quant Time: May 27 10:56 1998

Vial: 13
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

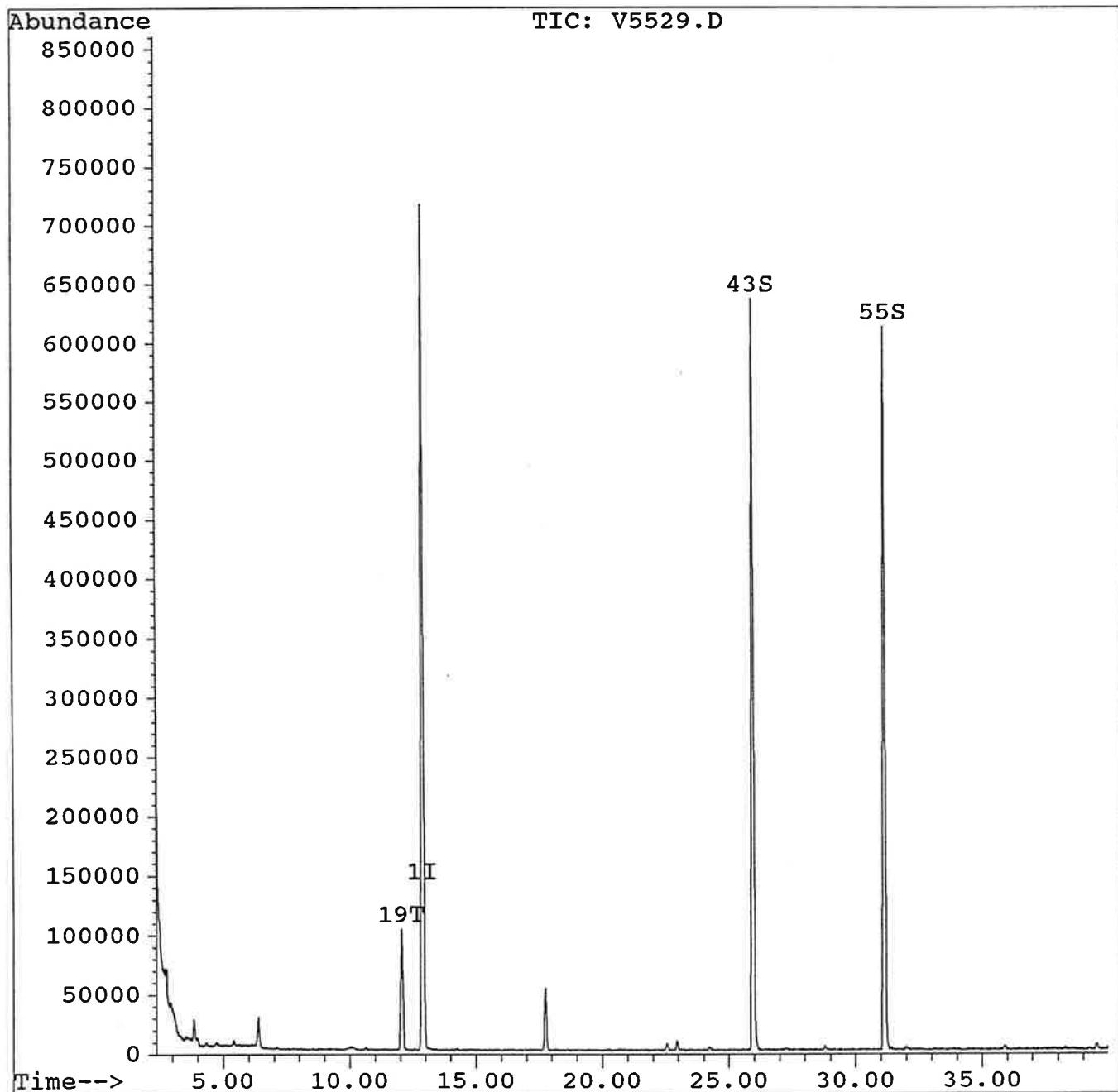
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.89	96	2230912	5.00	ug/L	0.01
System Monitoring Compounds						
43) 4-bromofluorobenzene	25.96	95	855081	5.08	ug/L	101.61%
55) 1,2-dichlorobenzene-d4	31.15	152	578832	5.16	ug/L	103.16%
Target Compounds						
19) Benzene	12.06	78	308604	0.72	ug/L	97

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5529.D
Acq On : 26 May 98 4:02 pm
Sample : R-6050.7 Dup
Misc : ICF Kaiser - Arco - RC-EL-21-0598
Quant Time: May 27 10:56 1998

Vial: 13
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5503.D
Acq On : 22 May 98 7:25 pm
Sample : R-6050.8
Misc : ICF Kaiser - Arco - RCDR-62-0598
Quant Time: May 23 11:47 1998

Vial: 16
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.87	96	2207894	5.00	ug/L	0.00

System Monitoring Compounds				%Recovery
43) 4-bromofluorobenzene	25.96	95	786595	4.72 ug/L 94.45%
55) 1,2-dichlorobenzene-d4	31.14	152	531483	4.79 ug/L 95.71%

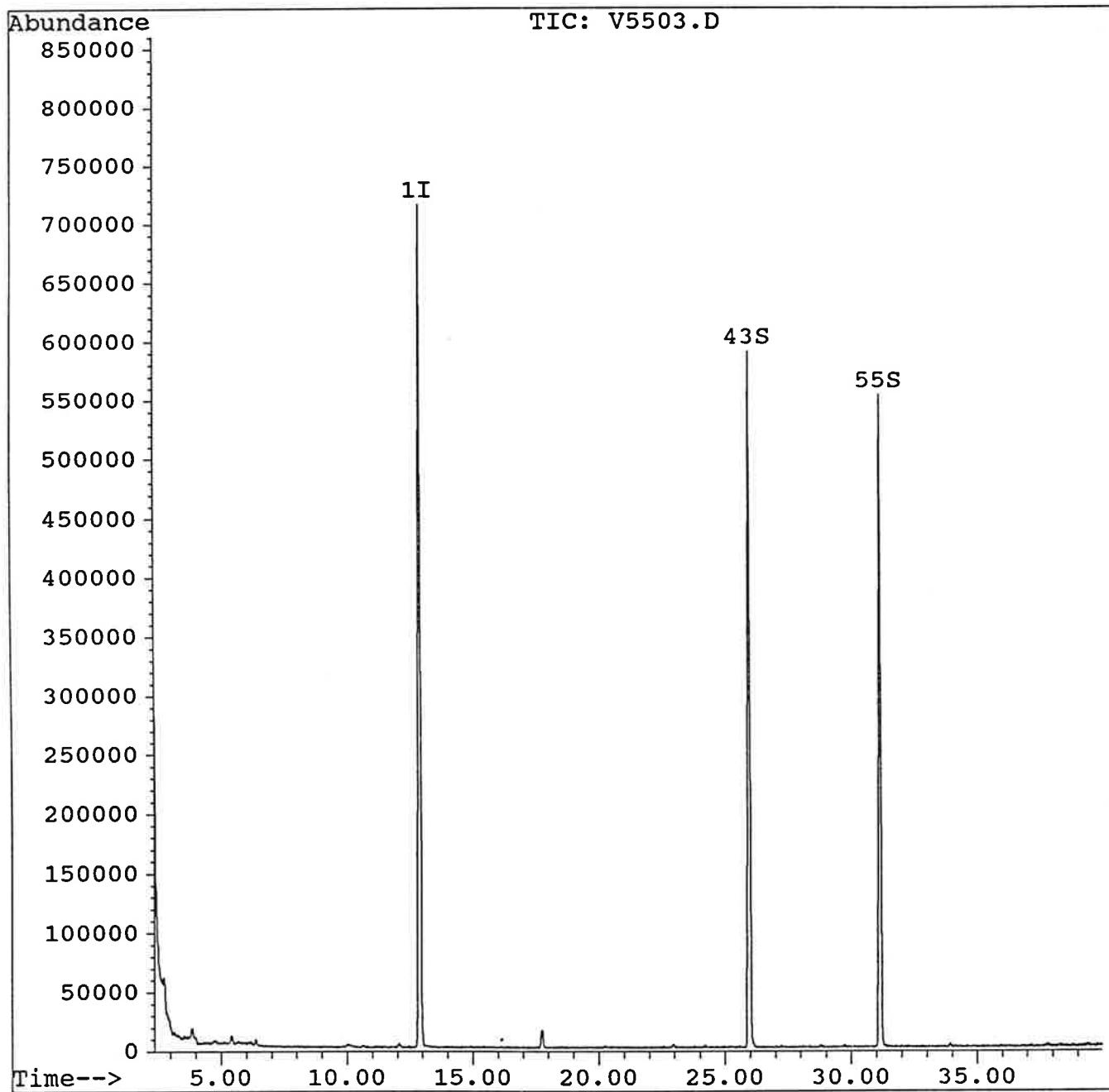
Target Compounds	Qvalue
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Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5503.D
Acq On : 22 May 98 7:25 pm
Sample : R-6050.8
Misc : ICF Kaiser - Arco - RCDR-62-0598
Quant Time: May 23 11:47 1998

Vial: 16
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5504.D
 Acq On : 22 May 98 8:12 pm
 Sample : R-6050.9
 Misc : ICF Kaiser - Arco - RCDR-31-0598
 Quant Time: May 23 11:47 1998

Vial: 1
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

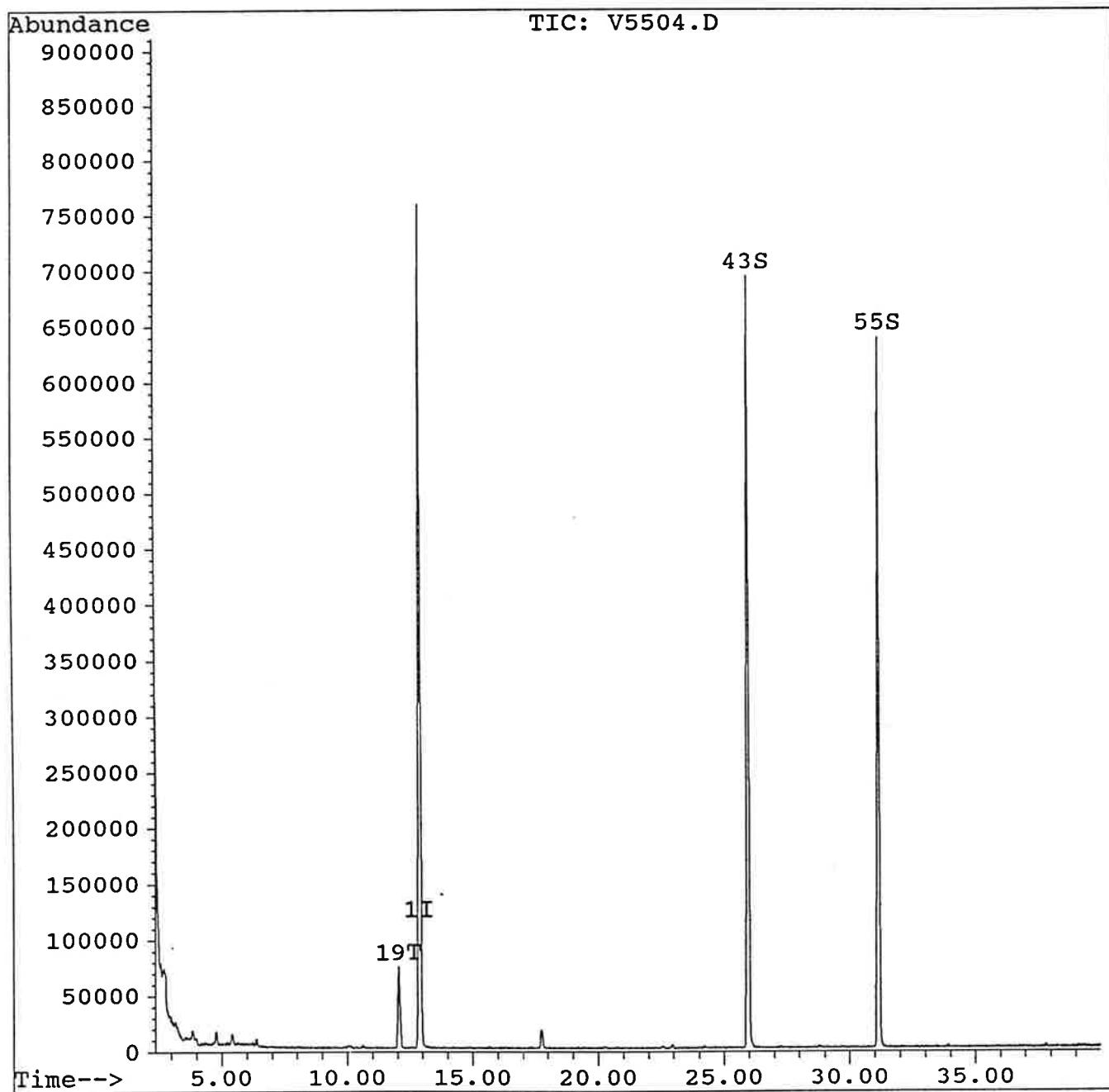
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.88	96	2320699	5.00	ug/L	0.00
System Monitoring Compounds						
43) 4-bromofluorobenzene	25.96	95	899633	5.14	ug/L	102.77%
55) 1,2-dichlorobenzene-d4	31.15	152	595617	5.10	ug/L	102.04%
Target Compounds						
19) Benzene	12.06	78	222507	0.50	ug/L	98

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5504.D
Acq On : 22 May 98 8:12 pm
Sample : R-6050.9
Misc : ICF Kaiser - Arco - RCDR-31-0598
Quant Time: May 23 11:47 1998

Vial: 1
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5505.D
 Acq On : 22 May 98 8:59 pm
 Sample : R-6050.10
 Misc : ICF Kaiser - Arco - RCDC-54-0598
 Quant Time: May 27 10:43 1998

Vial: 2
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

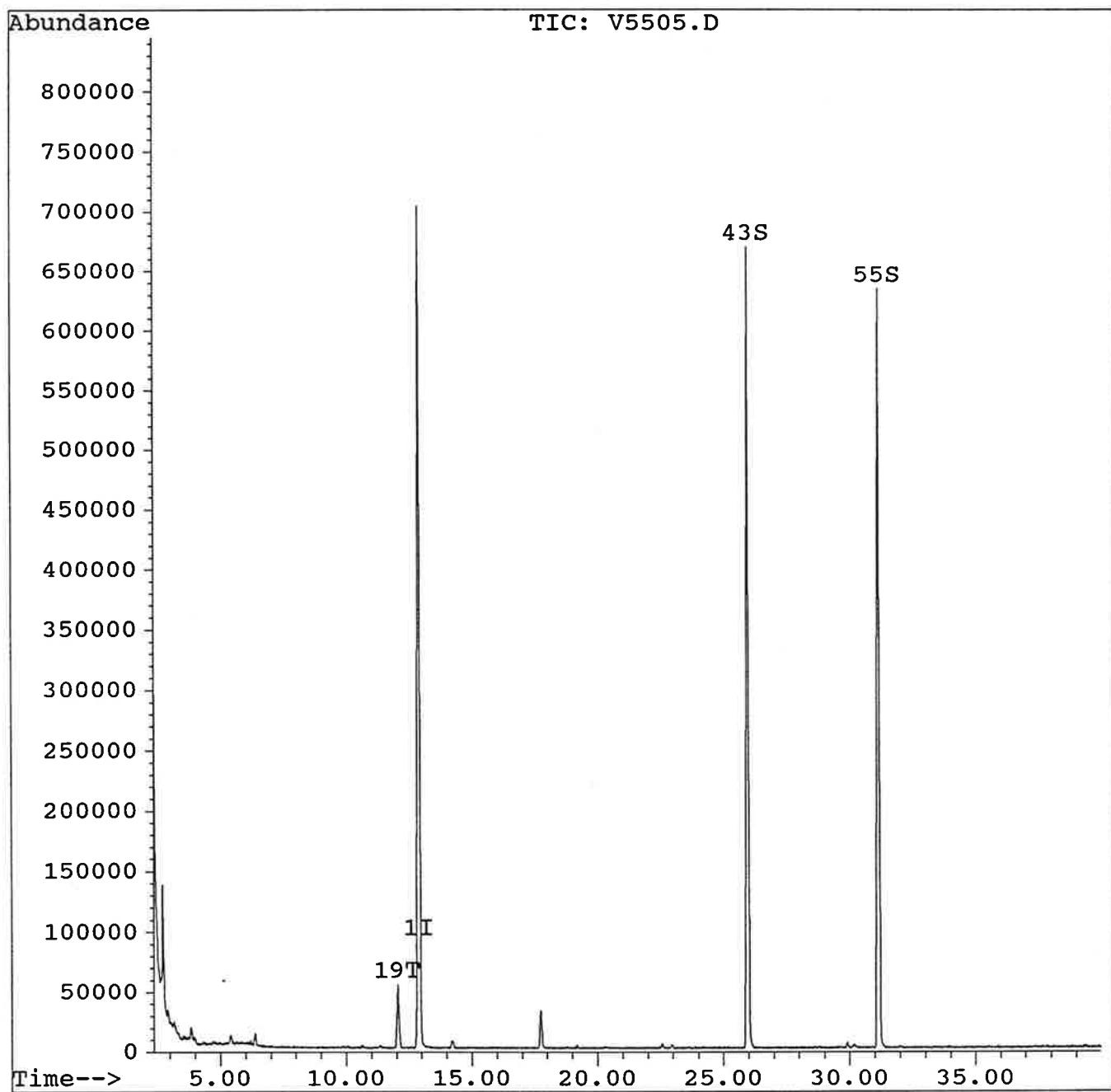
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.88	96	2251052	5.00	ug/L	0.00
System Monitoring Compounds						
43) 4-bromofluorobenzene	25.96	95	879366	5.18	ug/L	103.57%
55) 1,2-dichlorobenzene-d4	31.14	152	597320	5.27	ug/L	105.50%
Target Compounds						
19) Benzene	12.05	78	153281	0.36	ug/L	97

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5505.D
Acq On : 22 May 98 8:59 pm
Sample : R-6050.10
Misc : ICF Kaiser - Arco - RCDC-54-0598
Quant Time: May 27 10:43 1998

Vial: 2
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5506.D
 Acq On : 22 May 98 9:46 pm
 Sample : R-6050.11
 Misc : ICF Kaiser - Arco - RCDC-27-0598
 Quant Time: May 23 11:47 1998

Vial: 3
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

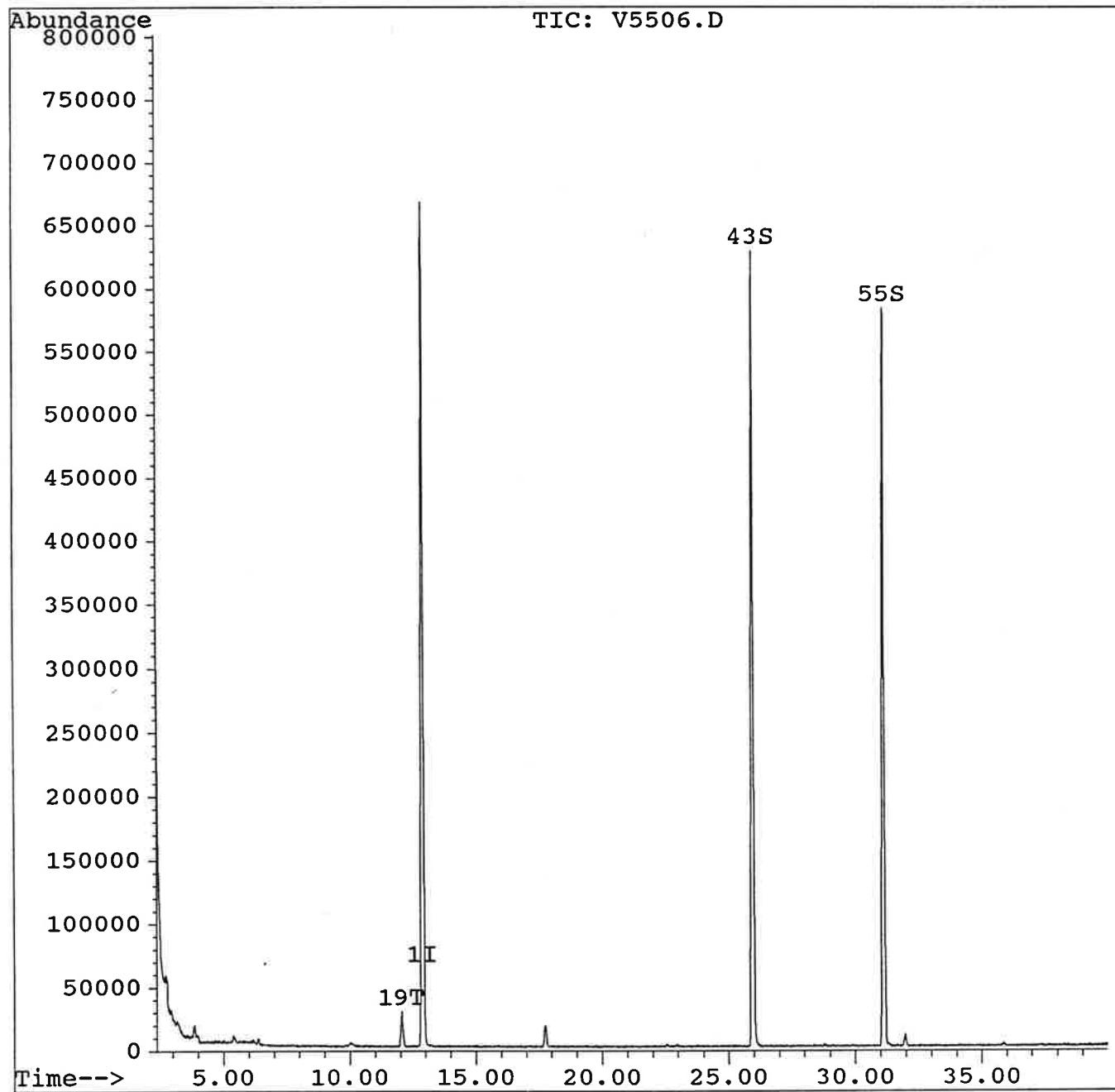
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.89	96	2125698	5.00	ug/L	0.00
System Monitoring Compounds						
43) 4-bromofluorobenzene	25.95	95	823981	5.14	ug/L	102.77%
55) 1,2-dichlorobenzene-d4	31.12	152	550638	5.15	ug/L	102.99%
Target Compounds						
19) Benzene	12.05	78	87978	0.22	ug/L	99

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5506.D
Acq On : 22 May 98 9:46 pm
Sample : R-6050.11
Misc : ICF Kaiser - Arco - RCDC-27-0598
Quant Time: May 23 11:47 1998

Vial: 3
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5510.D
 Acq On : 23 May 98 2:38 pm
 Sample : R-6050.12
 Misc : ICF Kaiser - Arco - RCDC-00-0598
 Quant Time: May 27 10:45 1998

Vial: 9
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

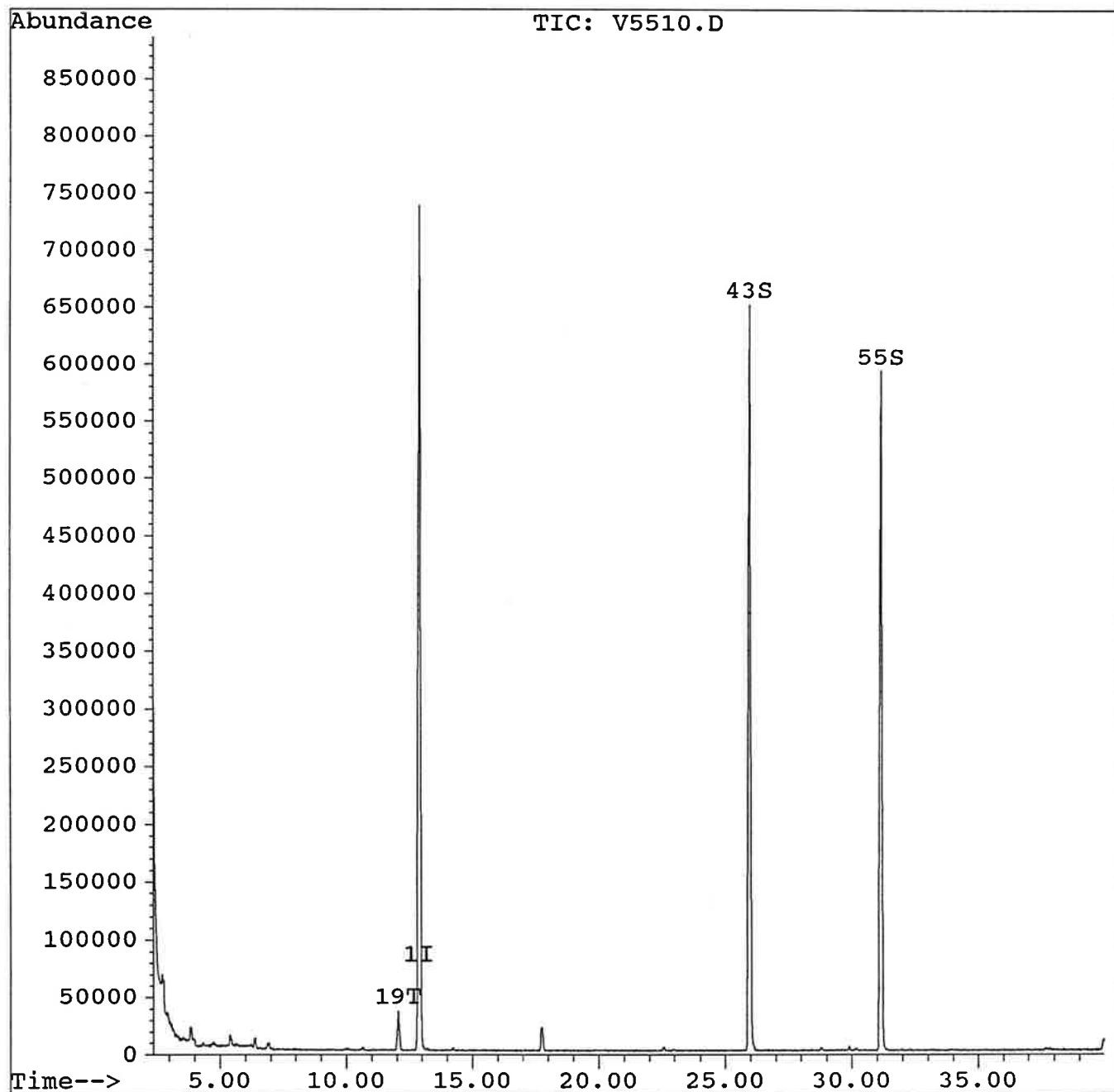
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.88	96	2285137	5.00	ug/L	0.00
System Monitoring Compounds					%Recovery	
43) 4-bromofluorobenzene	25.95	95	864525	5.01	ug/L	100.30%
55) 1,2-dichlorobenzene-d4	31.14	152	567015	4.93	ug/L	98.65%
Target Compounds					Qvalue	
19) Benzene	12.05	78	108877	0.25	ug/L	100

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5510.D
Acq On : 23 May 98 2:38 pm
Sample : R-6050.12
Misc : ICF Kaiser - Arco - RCDC-00-0598
Quant Time: May 27 10:45 1998

Vial: 9
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5511.D
 Acq On : 23 May 98 3:25 pm
 Sample : R-6050.13
 Misc : ICF Kaiser - Arco - RCDL-21-0598
 Quant Time: May 27 10:45 1998

Vial: 10
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.89	96	2184297	5.00	ug/L	0.00
System Monitoring Compounds						
43) 4-bromofluorobenzene	25.95	95	841756	5.11	ug/L	102.17%
55) 1,2-dichlorobenzene-d4	31.16	152	574973	5.23	ug/L	104.66%
Target Compounds						
19) Benzene	12.06	78	420977	1.01	ug/L	100

(#) = qualifier out of range (m) = manual integration
 V5511.D RUN524.M Wed May 27 10:46:05 1998

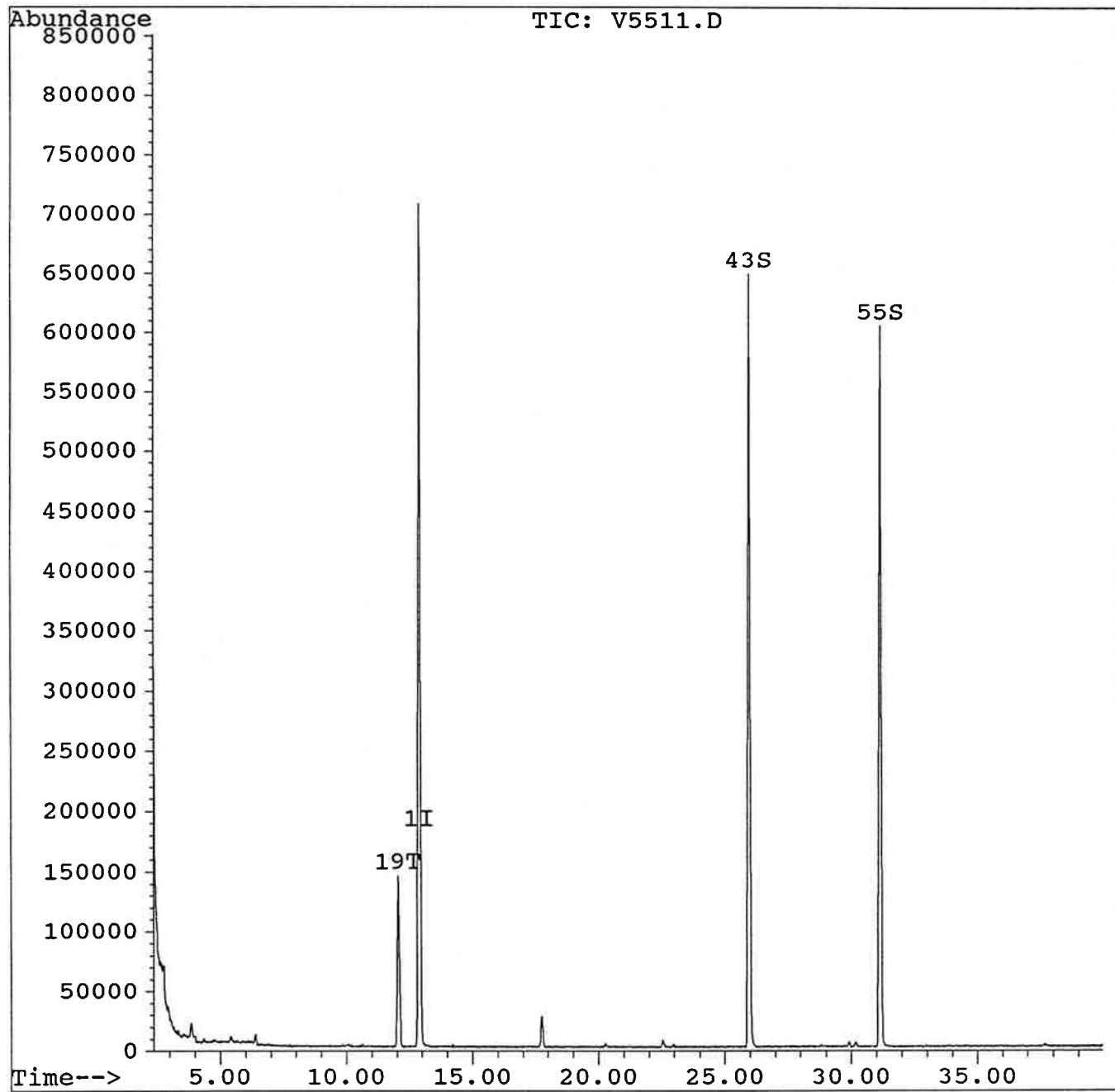
Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5511.D
Acq On : 23 May 98 3:25 pm
Sample : R-6050.13
Misc : ICF Kaiser - Arco - RCDL-21-0598
Quant Time: May 27 10:45 1998

Vial: 10
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5512.D
 Acq On : 23 May 98 4:13 pm
 Sample : R-6050.14
 Misc : ICF Kaiser - Arco - RCDL-10-0598
 Quant Time: May 27 10:46 1998

Vial: 11
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

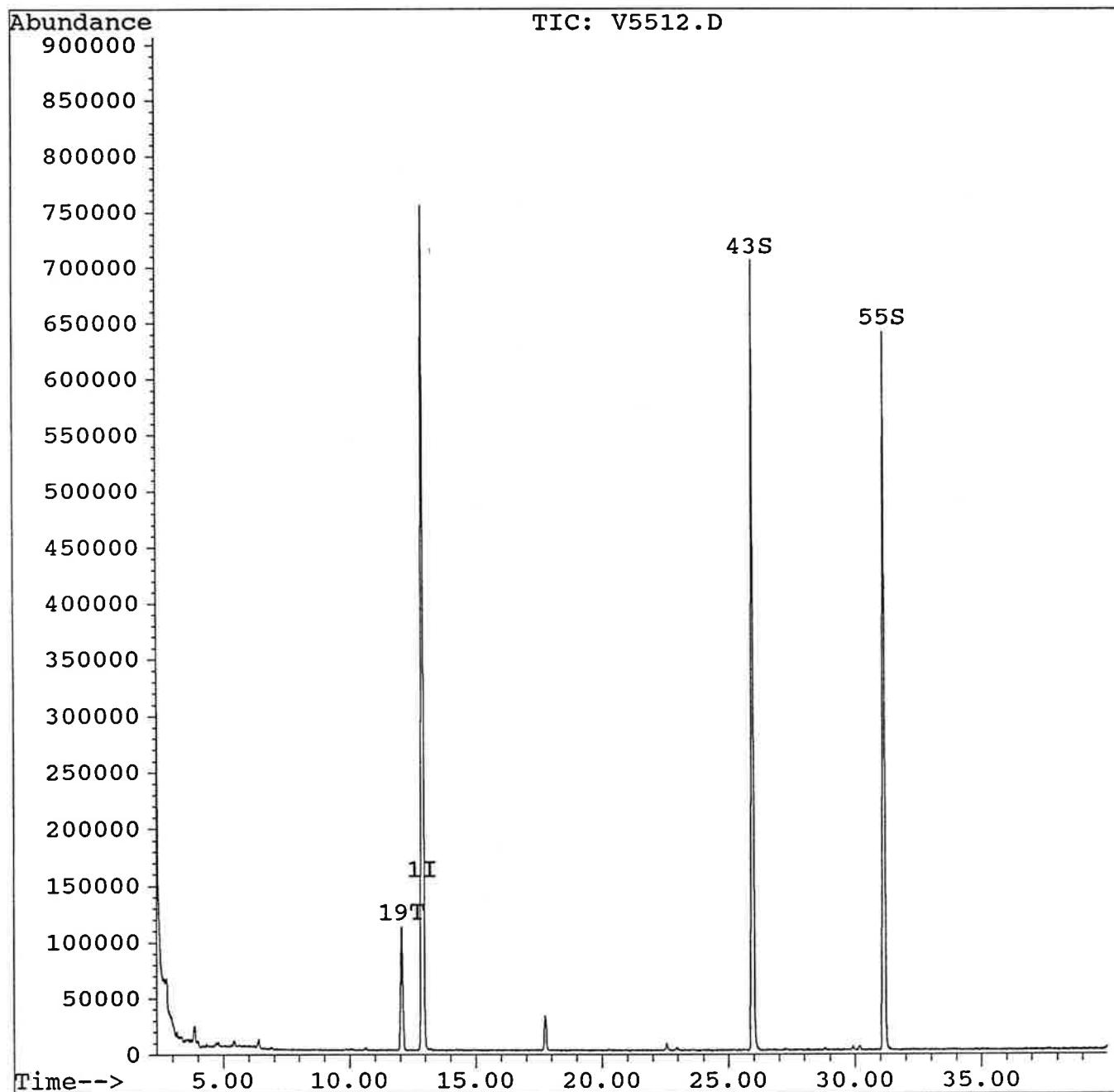
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.89	96	2331170	5.00	ug/L	0.00
System Monitoring Compounds						
43) 4-bromofluorobenzene	25.96	95	931827	5.30	ug/L	105.97%
55) 1,2-dichlorobenzene-d4	31.15	152	606867	5.18	ug/L	103.50%
Target Compounds						
19) Benzene	12.06	78	334314	0.75	ug/L	98

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5512.D
Acq On : 23 May 98 4:13 pm
Sample : R-6050.14
Misc : ICF Kaiser - Arco - RCDL-10-0598
Quant Time: May 27 10:46 1998

Vial: 11
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5526.D
 Acq On : 26 May 98 1:39 pm
 Sample : R-6050.15
 Misc : ICF Kaiser - Arco - RC-CR-51-0598 x2
 Quant Time: May 27 10:54 1998

Vial: 10
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.88	96	2336482	5.00	ug/L	0.00
System Monitoring Compounds					%Recovery	
43) 4-bromofluorobenzene	25.96	95	895703	5.08	ug/L	101.63%
55) 1,2-dichlorobenzene-d4	31.15	152	608473	5.18	ug/L	103.54%
Target Compounds					Qvalue	
19) Benzene	12.06	78	894385	2.00	ug/L	99

(#) = qualifier out of range (m) = manual integration
 V5526.D RUN524.M Wed May 27 10:54:23 1998

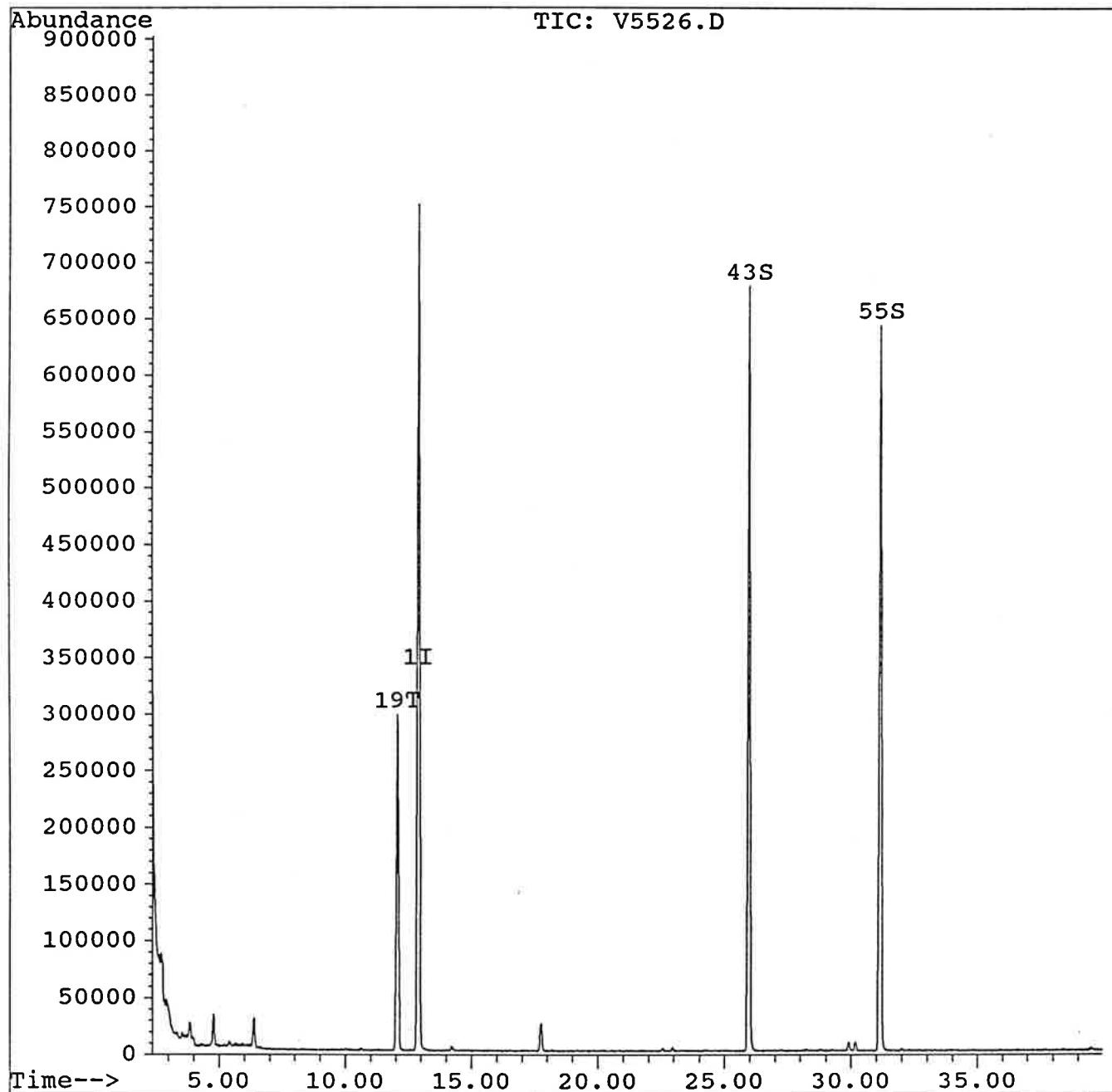
Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5526.D
Acq On : 26 May 98 1:39 pm
Sample : R-6050.15
Misc : ICF Kaiser - Arco - RC-CR-51-0598 x2
Quant Time: May 27 10:54 1998

Vial: 10
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5536.D
 Acq On : 26 May 98 9:33 pm
 Sample : R-6050.15 Dup
 Misc : ICF Kaiser - Arco - RC-CR-51-0598
 Quant Time: May 27 10:58 1998

Vial: 4
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

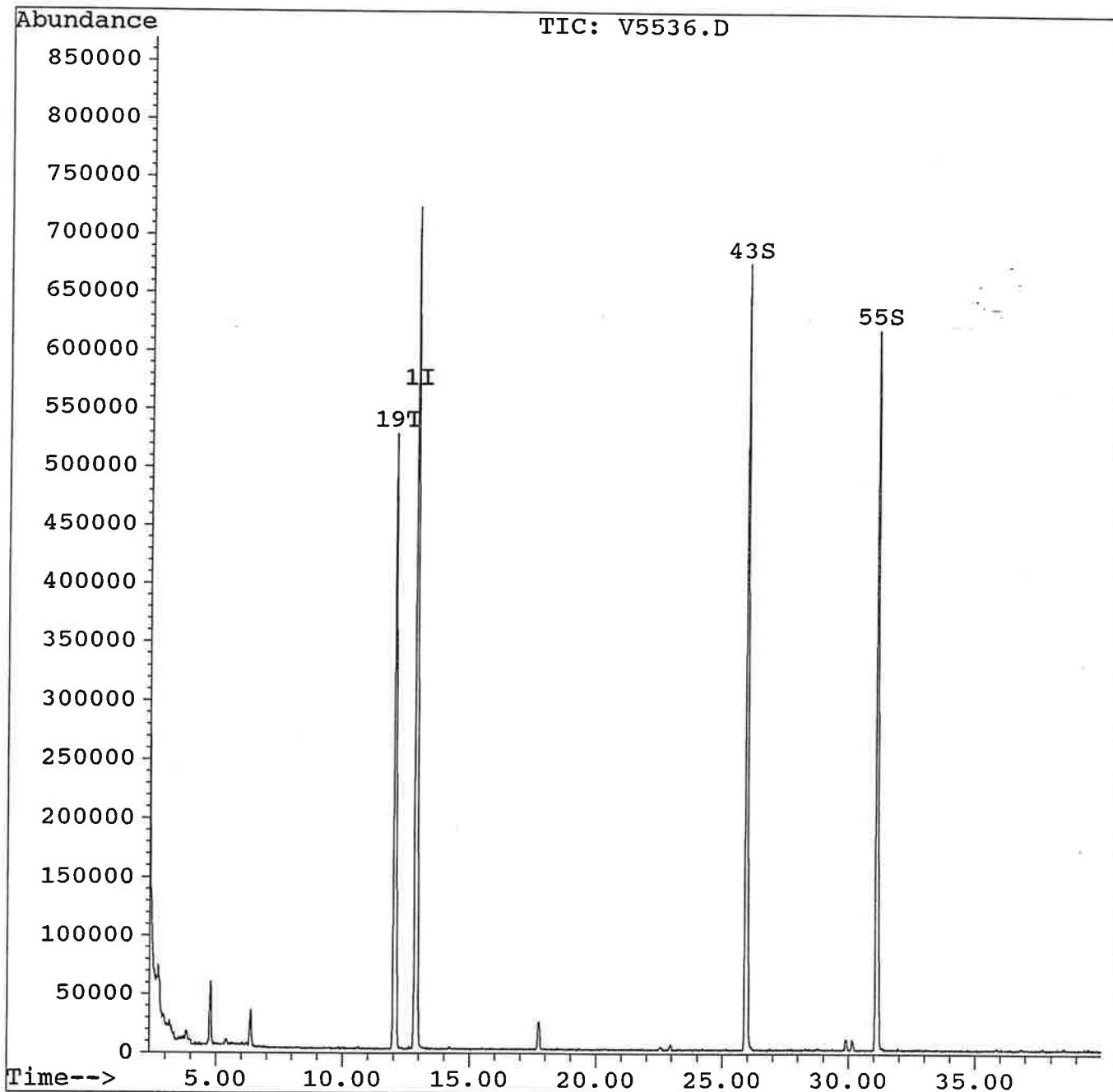
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.87	96	2292208	5.00	ug/L	0.00
System Monitoring Compounds						
43) 4-bromofluorobenzene	25.94	95	882682	5.10	ug/L	102.09%
55) 1,2-dichlorobenzene-d4	31.12	152	604703	5.24	ug/L	104.89%
Target Compounds						
19) Benzene	12.05	78	1582081	3.61	ug/L	100

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5536.D
Acq On : 26 May 98 9:33 pm
Sample : R-6050.15 Dup
Misc : ICF Kaiser - Arco - RC-CR-51-0598
Quant Time: May 27 10:58 1998

Vial: 4
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5527.D
 Acq On : 26 May 98 2:26 pm
 Sample : R-6050.16
 Misc : ICF Kaiser - Arco - RC-CR-25-0598 x2
 Quant Time: May 27 10:54 1998

Vial: 11
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.90	96	2307343	5.00	ug/L	0.01
System Monitoring Compounds						
43) 4-bromofluorobenzene	25.96	95	898662	5.16	ug/L	103.26%
55) 1,2-dichlorobenzene-d4	31.14	152	616474	5.31	ug/L	106.23%
Target Compounds						
19) Benzene	12.07	78	374319	0.85	ug/L	99

(#) = qualifier out of range (m) = manual integration
 V5527.D RUN524.M Wed May 27 10:54:58 1998

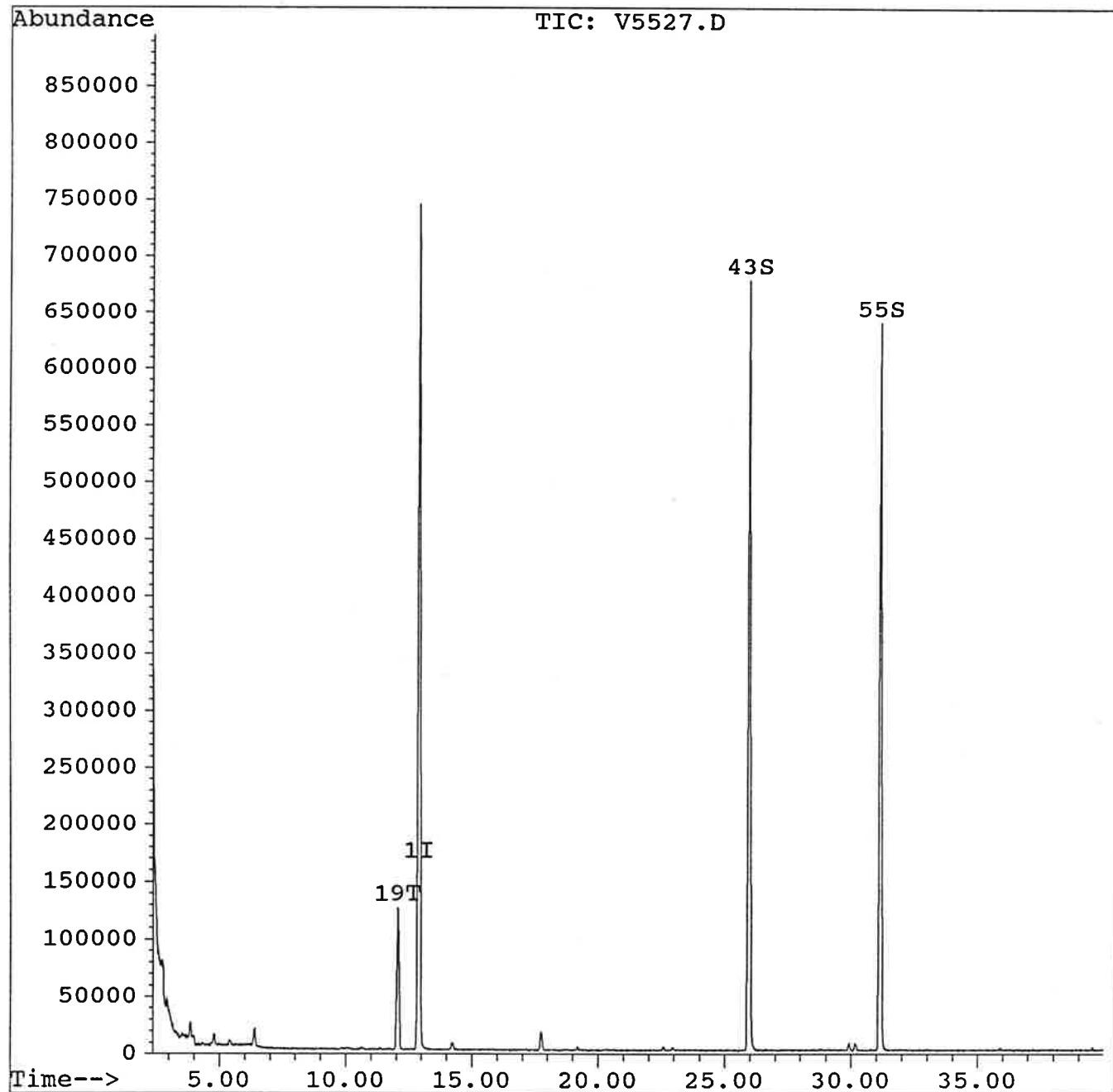
Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5527.D
Acq On : 26 May 98 2:26 pm
Sample : R-6050.16
Misc : ICF Kaiser - Arco - RC-CR-25-0598 x2
Quant Time: May 27 10:54 1998

Vial: 11
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5535.D
 Acq On : 26 May 98 8:46 pm
 Sample : R-6050.16 Dup
 Misc : ICF Kaiser - Arco - RC-CR-25-0598
 Quant Time: May 27 10:58 1998

Vial: 3
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.88	96	2250652	5.00	ug/L	0.00
System Monitoring Compounds						
43) 4-bromofluorobenzene	25.96	95	864886	5.09	ug/L	101.88%
55) 1,2-dichlorobenzene-d4	31.14	152	595798	5.26	ug/L	105.25%
Target Compounds						
19) Benzene	12.05	78	641409	1.49	ug/L	99

(#) = qualifier out of range (m) = manual integration
 V5535.D RUN524.M Wed May 27 10:59:33 1998

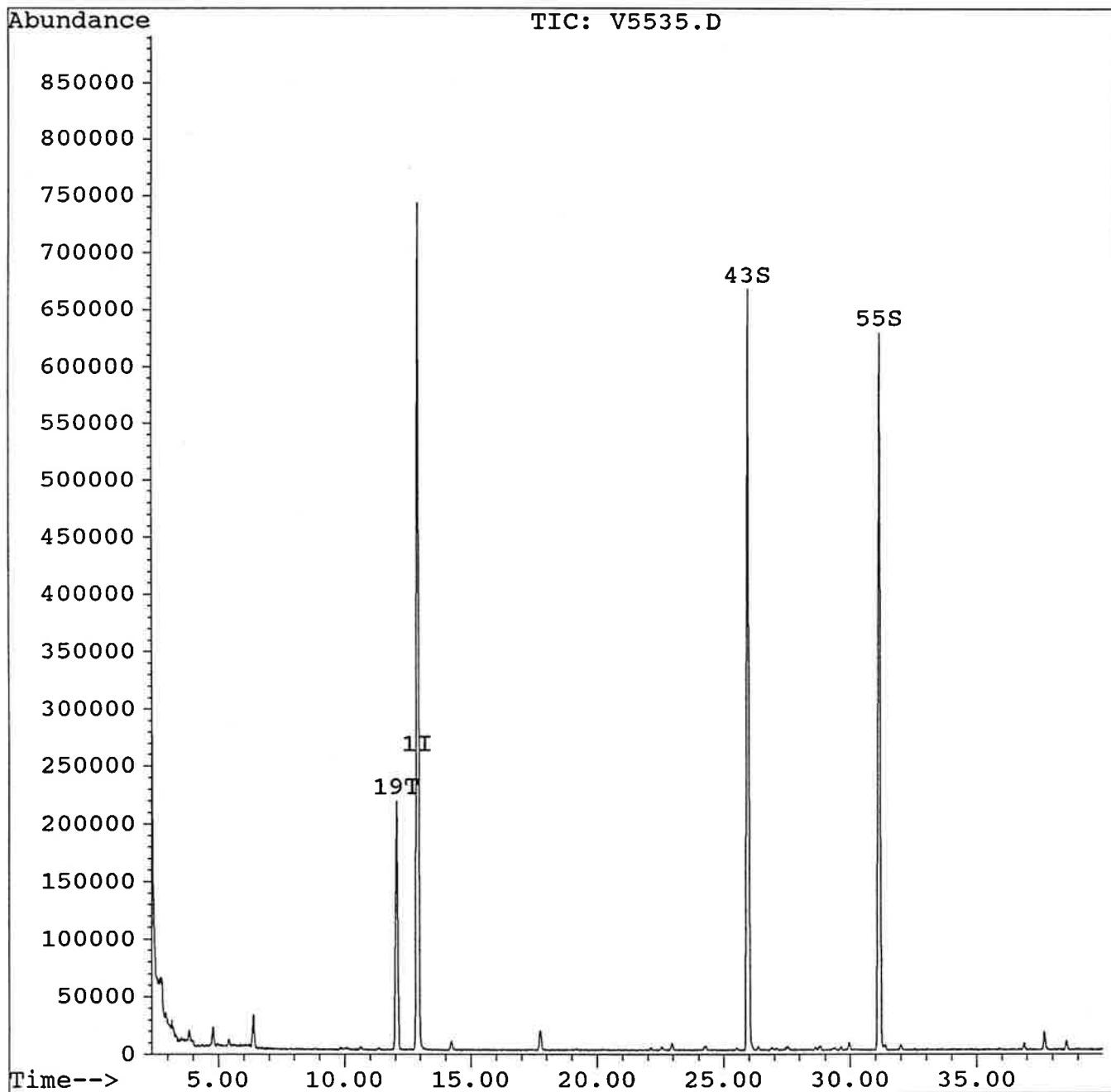
Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5535.D
Acq On : 26 May 98 8:46 pm
Sample : R-6050.16 Dup
Misc : ICF Kaiser - Arco - RC-CR-25-0598
Quant Time: May 27 10:58 1998

Vial: 3
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5515.D
 Acq On : 23 May 98 6:35 pm
 Sample : R-6050.17
 Misc : ICF Kaiser - Arco - RCCC-00-0598D
 Quant Time: May 27 10:47 1998

Vial: 14
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.89	96	2289369	5.00	ug/L	0.00
System Monitoring Compounds					%Recovery	
43) 4-bromofluorobenzene	25.97	95	886349	5.13	ug/L	102.64%
55) 1,2-dichlorobenzene-d4	31.14	152	615192	5.34	ug/L	106.84%
Target Compounds					Qvalue	
19) Benzene	12.07	78	96845	0.22	ug/L	98

(#) = qualifier out of range (m) = manual integration
 V5515.D RUN524.M Wed May 27 10:47:53 1998

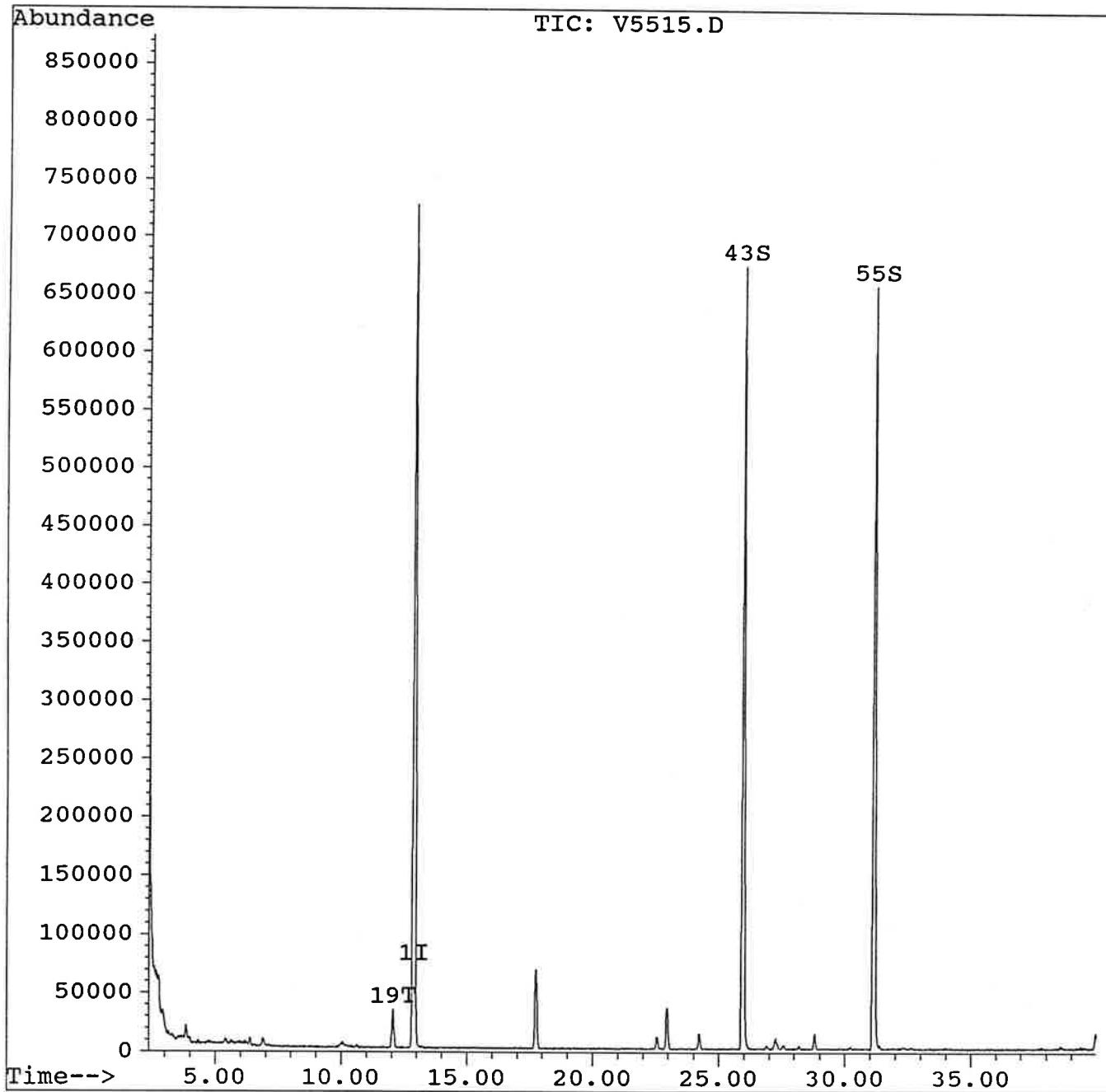
Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5515.D
Acq On : 23 May 98 6:35 pm
Sample : R-6050.17
Misc : ICF Kaiser - Arco - RCCC-00-0598D
Quant Time: May 27 10:47 1998

Vial: 14
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5516.D
 Acq On : 23 May 98 7:22 pm
 Sample : R-6050.18
 Misc : ICF Kaiser - Arco - RCCC-59-0598
 Quant Time: May 26 10:08 1998

Vial: 15
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

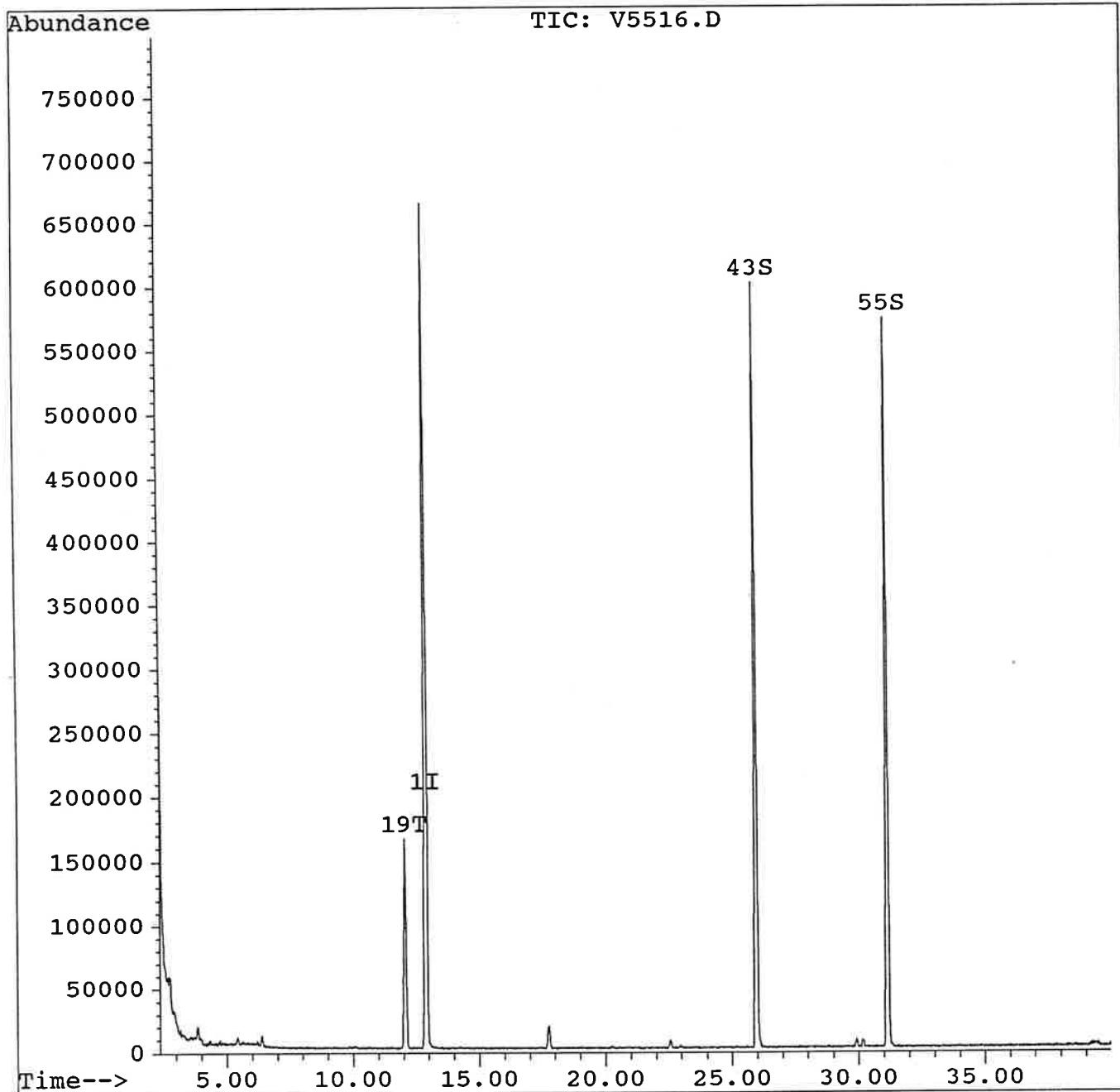
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Fluorobenzene	12.89	96	2068381	5.00	ug/L	0.00
System Monitoring Compounds						
43) 4-bromofluorobenzene	25.95	95	808841	5.18	ug/L	103.67%
55) 1,2-dichlorobenzene-d4	31.14	152	542284	5.21	ug/L	104.24%
Target Compounds						
19) Benzene	12.05	78	484230	1.23	ug/L	96

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5516.D
Acq On : 23 May 98 7:22 pm
Sample : R-6050.18
Misc : ICF Kaiser - Arco - RCCC-59-0598
Quant Time: May 26 10:08 1998

Vial: 15
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5528.D
 Acq On : 26 May 98 3:14 pm
 Sample : R-6050.18 Dup
 Misc : ICF Kaiser - Arco - RC-CC-59-0598
 Quant Time: May 27 10:55 1998

Vial: 12
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.89	96	2214133	5.00	ug/L	0.00
System Monitoring Compounds					%Recovery	
43) 4-bromofluorobenzene	25.96	95	840007	5.03	ug/L	100.58%
55) 1,2-dichlorobenzene-d4	31.14	152	567552	5.10	ug/L	101.91%
Target Compounds					Qvalue	
19) Benzene	12.06	78	523767	1.24	ug/L	99

(#) = qualifier out of range (m) = manual integration
 V5528.D RUN524.M Wed May 27 10:56:00 1998

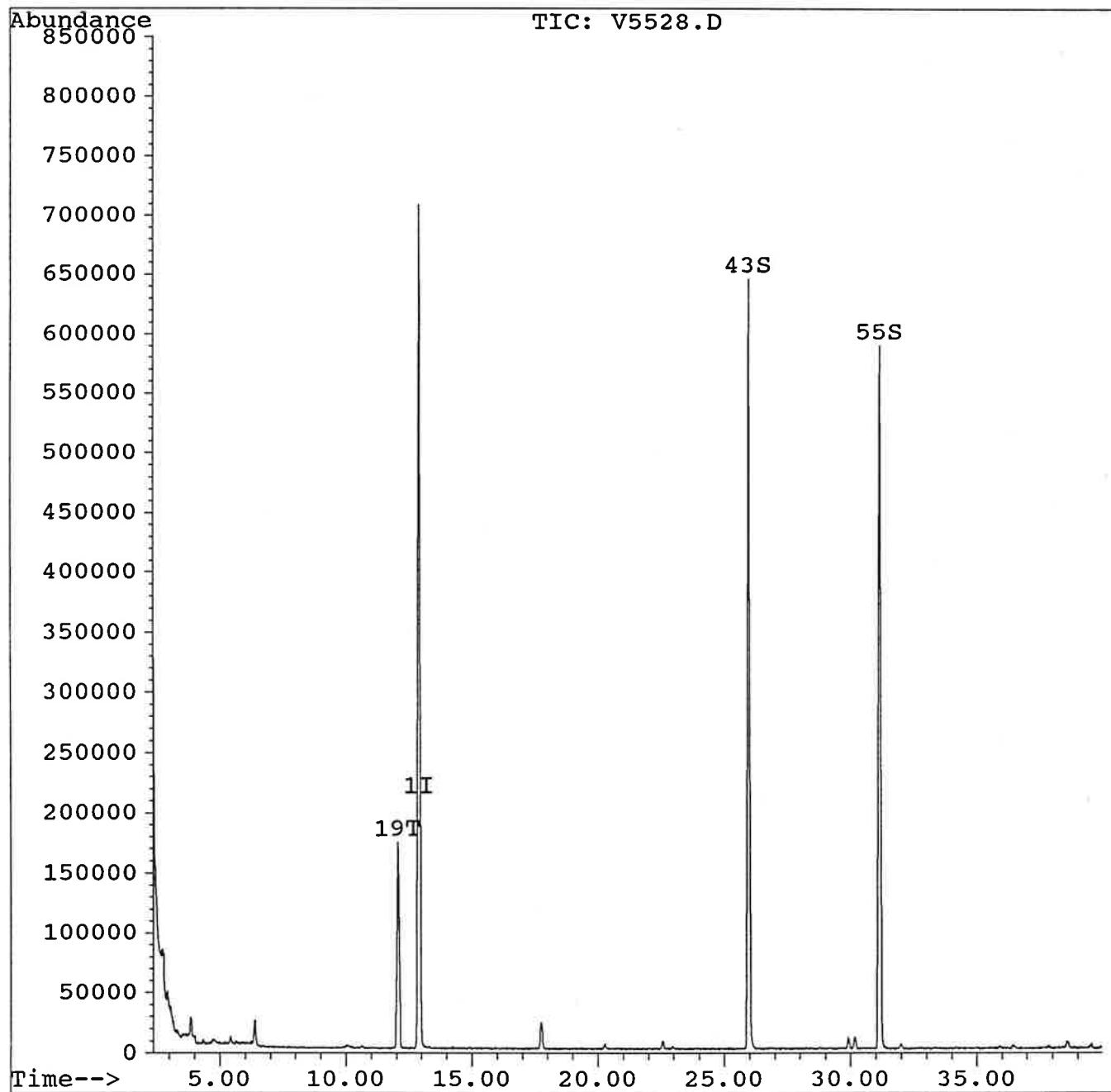
Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5528.D
Acq On : 26 May 98 3:14 pm
Sample : R-6050.18 Dup
Misc : ICF Kaiser - Arco - RC-CC-59-0598
Quant Time: May 27 10:55 1998

Vial: 12
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5517.D
 Acq On : 23 May 98 8:10 pm
 Sample : R-6050.19
 Misc : ICF Kaiser - Arco - RCCC-29-0598
 Quant Time: May 26 10:08 1998

Vial: 16
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

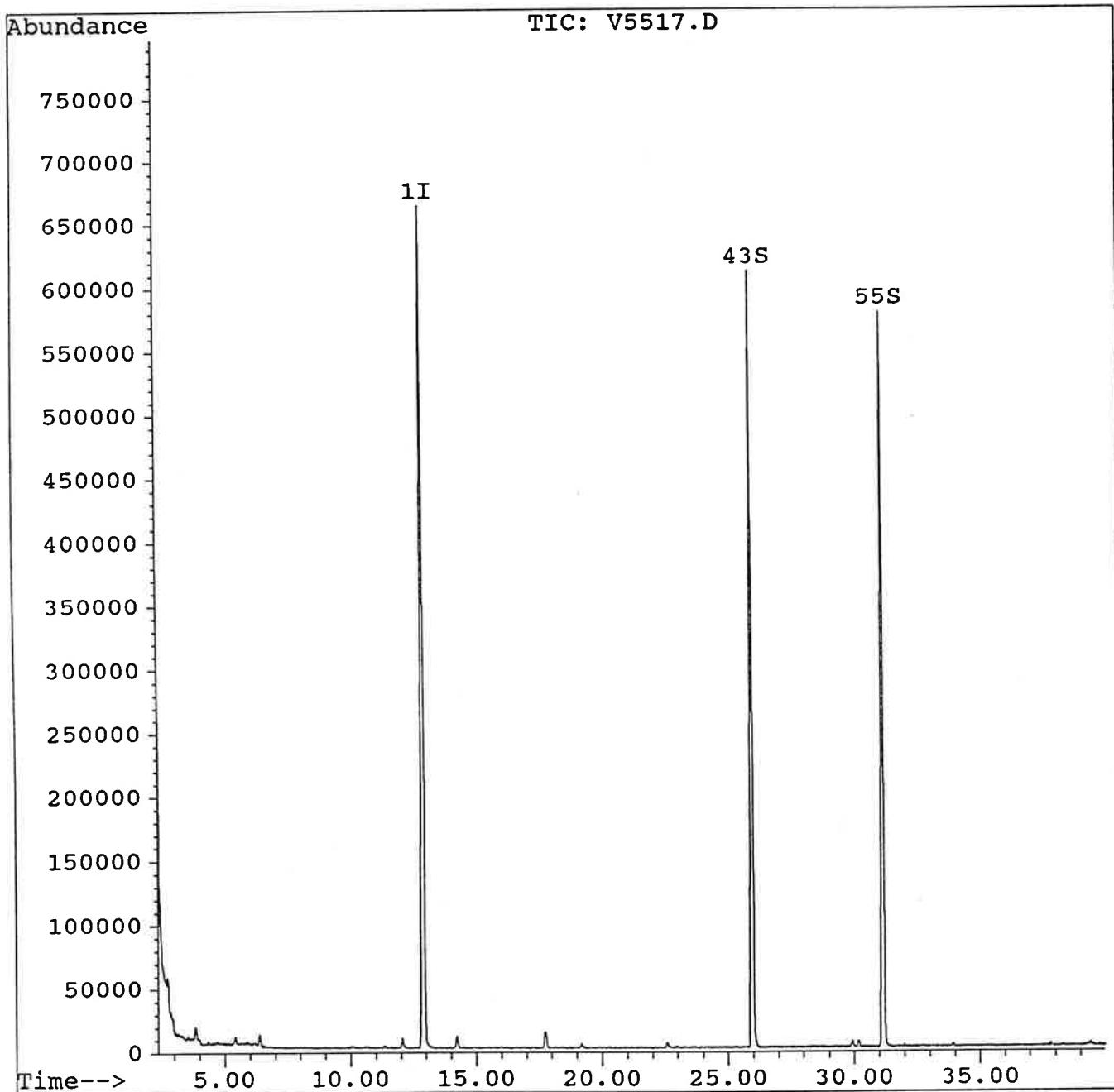
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.89	96	2094908	5.00	ug/L	0.00
System Monitoring Compounds						
43) 4-bromofluorobenzene	25.96	95	806221	5.10	ug/L	102.03%
55) 1,2-dichlorobenzene-d4	31.14	152	538004	5.11	ug/L	102.11%
Target Compounds						
						Qvalue

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5517.D
Acq On : 23 May 98 8:10 pm
Sample : R-6050.19
Misc : ICF Kaiser - Arco - RCCC-29-0598
Quant Time: May 26 10:08 1998

Vial: 16
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5518.D
 Acq On : 23 May 98 8:57 pm
 Sample : R-6050.20
 Misc : ICF Kaiser - Arco - RCCC-00-0598
 Quant Time: May 27 10:48 1998

Vial: 17
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.89	96	2277808	5.00	ug/L	0.00
System Monitoring Compounds						
43) 4-bromofluorobenzene	25.96	95	878587	5.11	ug/L	102.26%
55) 1,2-dichlorobenzene-d4	31.15	152	612316	5.34	ug/L	106.88%
Target Compounds						
19) Benzene	12.06	78	79803	0.18	ug/L	97

(#) = qualifier out of range (m) = manual integration
 V5518.D RUN524.M Wed May 27 10:49:09 1998

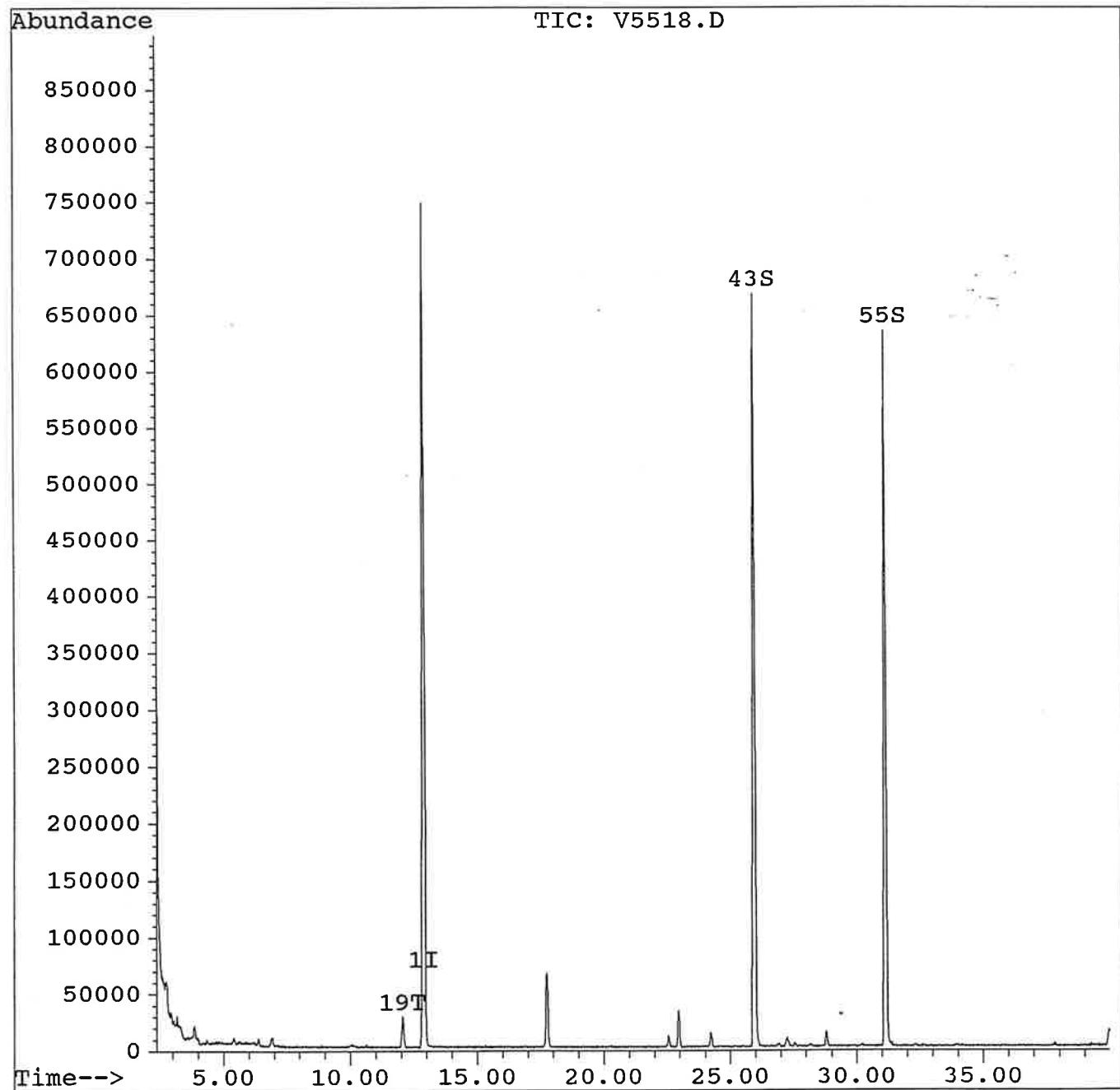
Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5518.D
Acq On : 23 May 98 8:57 pm
Sample : R-6050.20
Misc : ICF Kaiser - Arco - RCCC-00-0598
Quant Time: May 27 10:48 1998

Vial: 17
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5519.D
 Acq On : 23 May 98 9:44 pm
 Sample : R-6050.21
 Misc : ICF Kaiser - Arco - RCCL-16-0598
 Quant Time: May 27 10:49 1998

Vial: 18
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.89	96	2255457	5.00	ug/L	0.00
System Monitoring Compounds						
43) 4-bromofluorobenzene	25.95	95	897570	5.28	ug/L	105.50%
55) 1,2-dichlorobenzene-d4	31.14	152	593472	5.23	ug/L	104.62%
Target Compounds						
19) Benzene	12.04	78	260864	0.61	ug/L	98

(#) = qualifier out of range (m) = manual integration
 V5519.D RUN524.M Wed May 27 10:49:41 1998

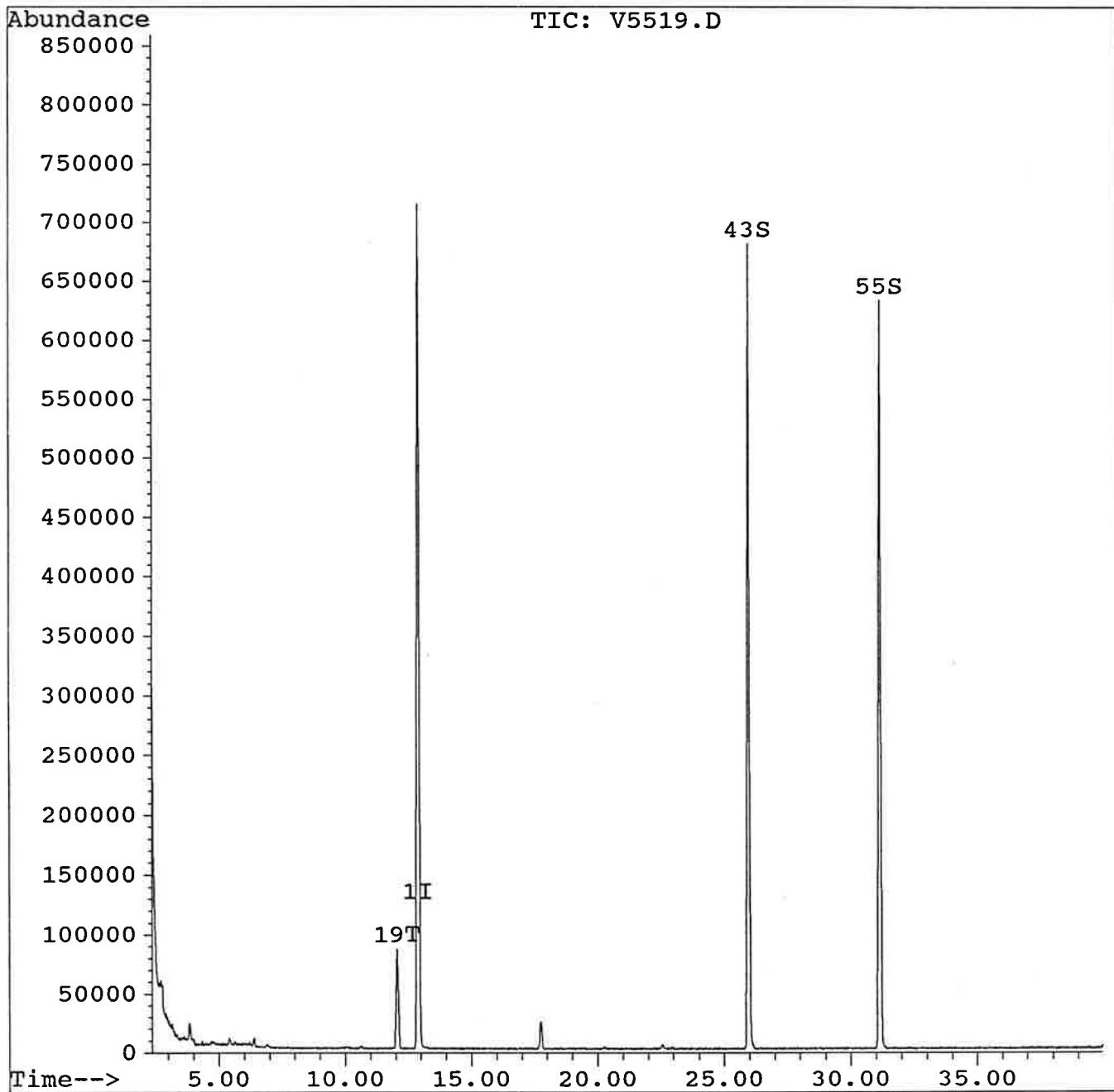
Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5519.D
Acq On : 23 May 98 9:44 pm
Sample : R-6050.21
Misc : ICF Kaiser - Arco - RCCL-16-0598
Quant Time: May 27 10:49 1998

Vial: 18
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5520.D
 Acq On : 23 May 98 10:31 pm
 Sample : R-6050.22
 Misc : ICF Kaiser - Arco - RCCL-08-0598
 Quant Time: May 27 10:50 1998

Vial: 19
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

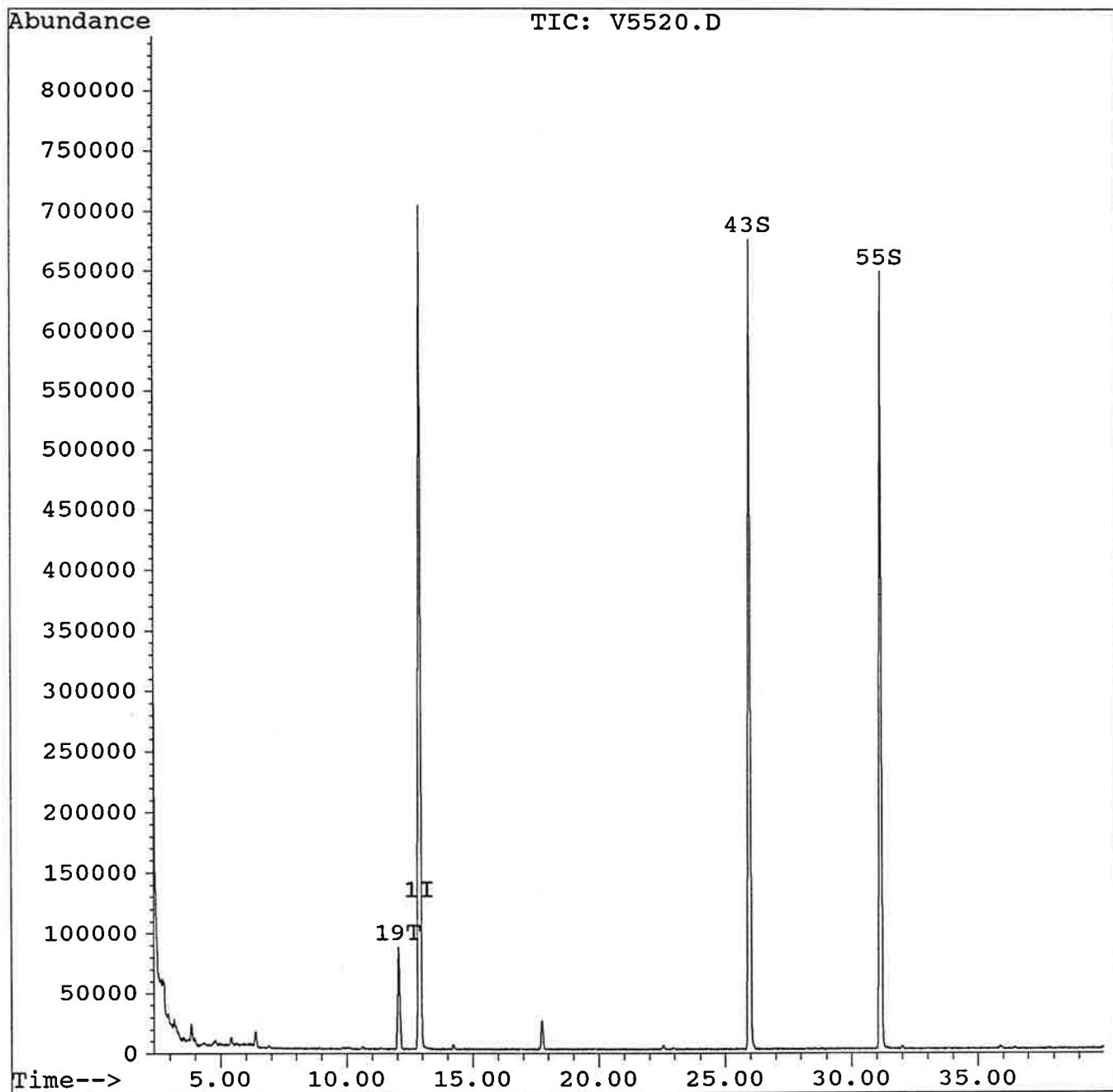
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.89	96	2221364	5.00	ug/L	0.00
System Monitoring Compounds						
43) 4-bromofluorobenzene	25.95	95	876247	5.23	ug/L	104.58%
55) 1,2-dichlorobenzene-d4	31.14	152	606049	5.42	ug/L	108.47%
Target Compounds						
19) Benzene	12.06	78	257594	0.61	ug/L	100

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5520.D
Acq On : 23 May 98 10:31 pm
Sample : R-6050.22
Misc : ICF Kaiser - Arco - RCCL-08-0598
Quant Time: May 27 10:50 1998

Vial: 19
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5521.D
 Acq On : 23 May 98 11:19 pm
 Sample : R-6050.23
 Misc : ICF Kaiser - Arco - RCTB-01-0598
 Quant Time: May 27 10:50 1998

Vial: 20
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

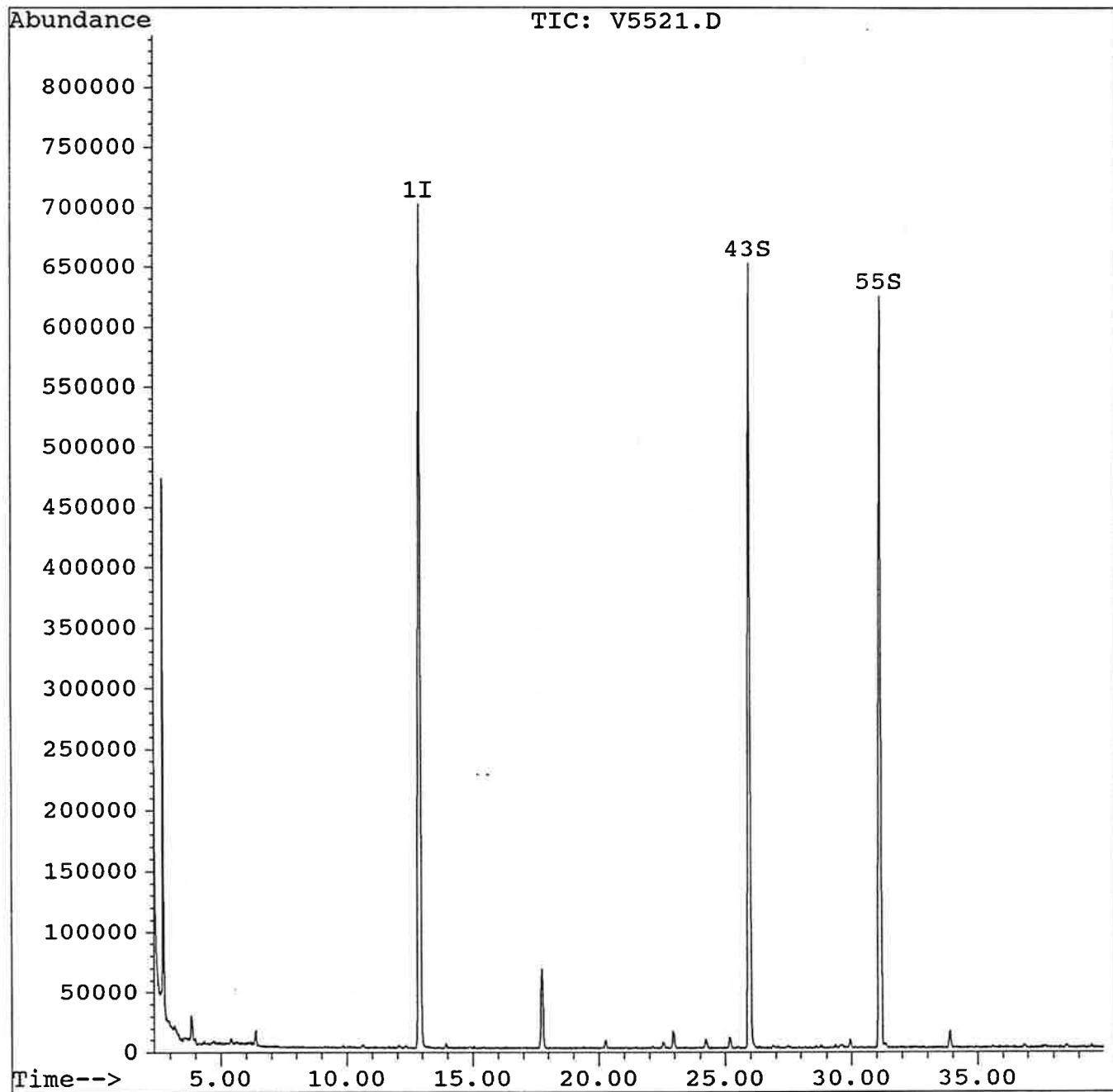
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.88	96	2187161	5.00	ug/L	0.00
System Monitoring Compounds					%Recovery	
43) 4-bromofluorobenzene	25.96	95	861507	5.22	ug/L	104.43%
55) 1,2-dichlorobenzene-d4	31.12	152	587028	5.34	ug/L	106.71%
Target Compounds					Qvalue	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5521.D
Acq On : 23 May 98 11:19 pm
Sample : R-6050.23
Misc : ICF Kaiser - Arco - RCTB-01-0598
Quant Time: May 27 10:50 1998

Vial: 20
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



RELIANCE LABORATORIES, INC.
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Customer : ICF Kaiser/Arco

SAMPLE NO.	SMC1 #	SMC2 #	#	OTHER #	TOT OUT
01 VBLK01	106	105			
02 R-6050.1	101	99			
03 R-6050.2	103	101			
04 R-6050.3	103	102			
05 R-6050.4	101	99			
06 R-6050.5	107	105			
07 R-6050.6	99	100			
08 R-6050.7	98	98			
09 R-6050.8	94	96			
10 R-6050.9	103	102			
11 R-6050.10	104	106			
12 R-6050.11	103	103			
13 VBLK02	105	106			
14 R-6050.12	100	99			
15 R-6050.13	102	105			
16 R-6050.14	106	104			
17 R-6050.17	103	107			
18 R-6050.18	104	104			
19 R-6050.19	102	102			
20 R-6050.20	102	107			
21 R-6050.21	106	105			
22 R-6050.22	105	108			
23 R-6050.23	104	107			
24 VBLK03	95	101			
25 R-6050.6	98	96			
26 R-6050.15	102	104			
27 R-6050.16	103	106			
28 R-6050.18	101	102			
29 R-6050.7	102	103			
30					

QC LIMITS

SMC1 = 4-bromofluorobenzene (80-120)
SMC2 " = 1,2-dichlorobenzene-d4 (80-120)

- # Column to be used to flag recovery values
- * Values outside of contract required QC limits
- D System Monitoring Compound diluted out

RELIANCE LABORATORIES, INC.
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Customer : ICF Kaiser/Arco

	SAMPLE NO.	SMC1 #	#	#	OTHER #	TOT OUT
01	R-6050.3MS	103	107			
02	R-6050.3MSD	91	94			
03	R-6050.13MS	106	111			
04	R-6050.13MSD	103	109			
05	R-6050.16	102	105			
06	R-6050.15	103	105			
07						
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QC LIMITS

SMC1 = 4-bromofluorobenzene (80-120)
 SMC2 " = 1,2-dichlorobenzene-d4 (80-120)

- # Column to be used to flag recovery values
- * Values outside of contract required QC limits
- D System Monitoring Compound diluted out

RELIANCE LABORATORIES, INC.
WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Matrix Spike - Sample No.: R-6050.3

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC	#	QC. LIMITS REC.
Benzene	2.00	0.60	2.59	100		(80-120)
Toluene	2.00	0.00	1.61	81		(80-120)
Ethylbenzene	2.00	0.00	1.97	99		(80-120)
m&p-xylenes	2.00	0.00	1.98	99		(80-120)
o-xylenes	2.00	0.00	2.00	100		(80-120)
Styrene	2.00	0.00	1.96	98		(80-120)

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC	#	% RPD	#	QC LIMITS RPD	REC.
Benzene	2.00	2.67	103		3		20	(80-120)
Toluene	2.00	1.62	81		1		20	(80-120)
Ethylbenzene	2.00	2.00	100		2		20	(80-120)
m&p-xylenes	2.00	1.97	99		1		20	(80-120)
o-xylenes	2.00	1.86	93		7		20	(80-120)
Styrene	2.00	1.79	90		9		20	(80-120)

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Comments: _____

RELIANCE LABORATORIES, INC.
WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Matrix Spike - Sample No.: R-6050.13

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Benzene	1.75	1.01	2.70	97	(80-120)
Toluene	1.75	0.00	1.41	81	(80-120)
Ethylbenzene	1.75	0.00	1.75	100	(80-120)
m&p-xlenes	1.75	0.00	1.65	94	(80-120)
o-xlenes	1.75	0.00	1.72	98	(80-120)
Styrene	1.75	0.00	1.67	95	(80-120)

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
Benzene	1.75	2.62	95	2	20	(80-120)
Toluene	1.75	1.40	80	1	20	(80-120)
Ethylbenzene	1.75	1.66	95	5	20	(80-120)
m&p-xlenes	1.75	1.62	93	2	20	(80-120)
o-xlenes	1.75	1.66	95	4	20	(80-120)
Styrene	1.75	1.61	92	4	20	(80-120)

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Comments: _____

RELIANCE LABORATORIES, INC.

VOLATILE METHOD BLANK SUMMARY

Customer : ICF Kaiser/ArcoLab File ID: V5495.DLab Sample ID: BLANK1Date Analyzed: 5/22/98Time Analyzed: 1306GC Column: DB-624ID: 0.53 (mm)Instrument ID: HP5971A

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01 R-6050.1	ER-64	V5496.D	1353
02 R-6050.2	ER-32	V5497.D	1440
03 R-6050.3	EC-58	V5498.D	1528
04 R-6050.4	EC-29	V5499.D	1615
05 R-6050.5	EC-00	V5500.D	1703
06 R-6050.6	EL-42	V5501.D	1750
07 R-6050.7	EL-21	V5502.D	1837
08 R-6050.8	DR-62	V5503.D	1925
09 R-6050.9	DR-31	V5504.D	2012
10 R-6050.10	DC-54	V5505.D	2059
11 R-6050.11	DC-27	V5506.D	2146
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COMMENTS:

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5495.D
 Acq On : 22 May 98 1:06 pm
 Sample : blank
 Misc : blank
 Quant Time: May 27 10:38 1998

Vial: 7
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

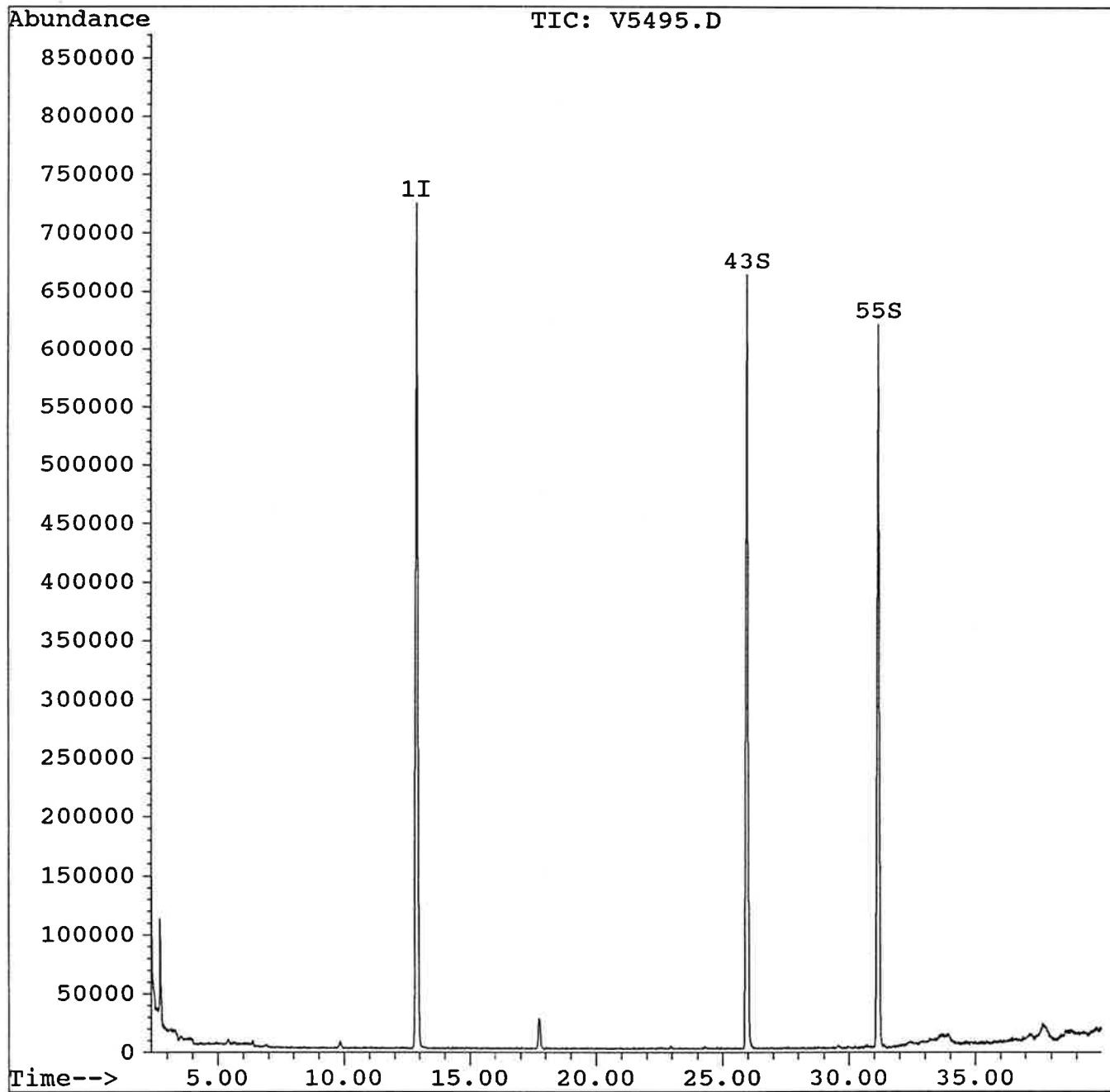
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.88	96	2233649	5.00	ug/L	0.00
System Monitoring Compounds					%Recovery	
43) 4-bromofluorobenzene	25.96	95	893960	5.31	ug/L	106.10%
55) 1,2-dichlorobenzene-d4	31.15	152	591408	5.26	ug/L	105.27%
Target Compounds					Qvalue	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5495.D
Acq On : 22 May 98 1:06 pm
Sample : blank
Misc : blank
Quant Time: May 27 10:38 1998

Vial: 7
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



RELIANCE LABORATORIES, INC.

VOLATILE METHOD BLANK SUMMARY

Customer : ICF KaiserLab File ID: V5509.DLab Sample ID: BLANK2Date Analyzed: 5/23/98Time Analyzed: 1351GC Column: DB-624ID: 0.53 (mm)Instrument ID: HP5971A

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	R-6050.12	DC-00	V5510.D
02	R-6050.13	DL-21	V5511.D
03	R-6050.14	DL-10	V5512.D
04	R-6050.17	CC-00D	V5515.D
05	R-6050.18	CC-59	V5516.D
06	R-6050.19	CC-29	V5517.D
07	R-6050.20	CC-00	V5518.D
08	R-6050.21	CL-16	V5519.D
09	R-6050.22	CL-08	V5520.D
10	R-6050.23	TB-01	V5521.D
11			
12			
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COMMENTS:

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5509.D
 Acq On : 23 May 98 1:51 pm
 Sample : blank
 Misc : blank
 Quant Time: May 27 10:44 1998

Vial: 7
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics
 Last Update : Wed May 27 09:01:39 1998
 Response via : Multiple Level Calibration

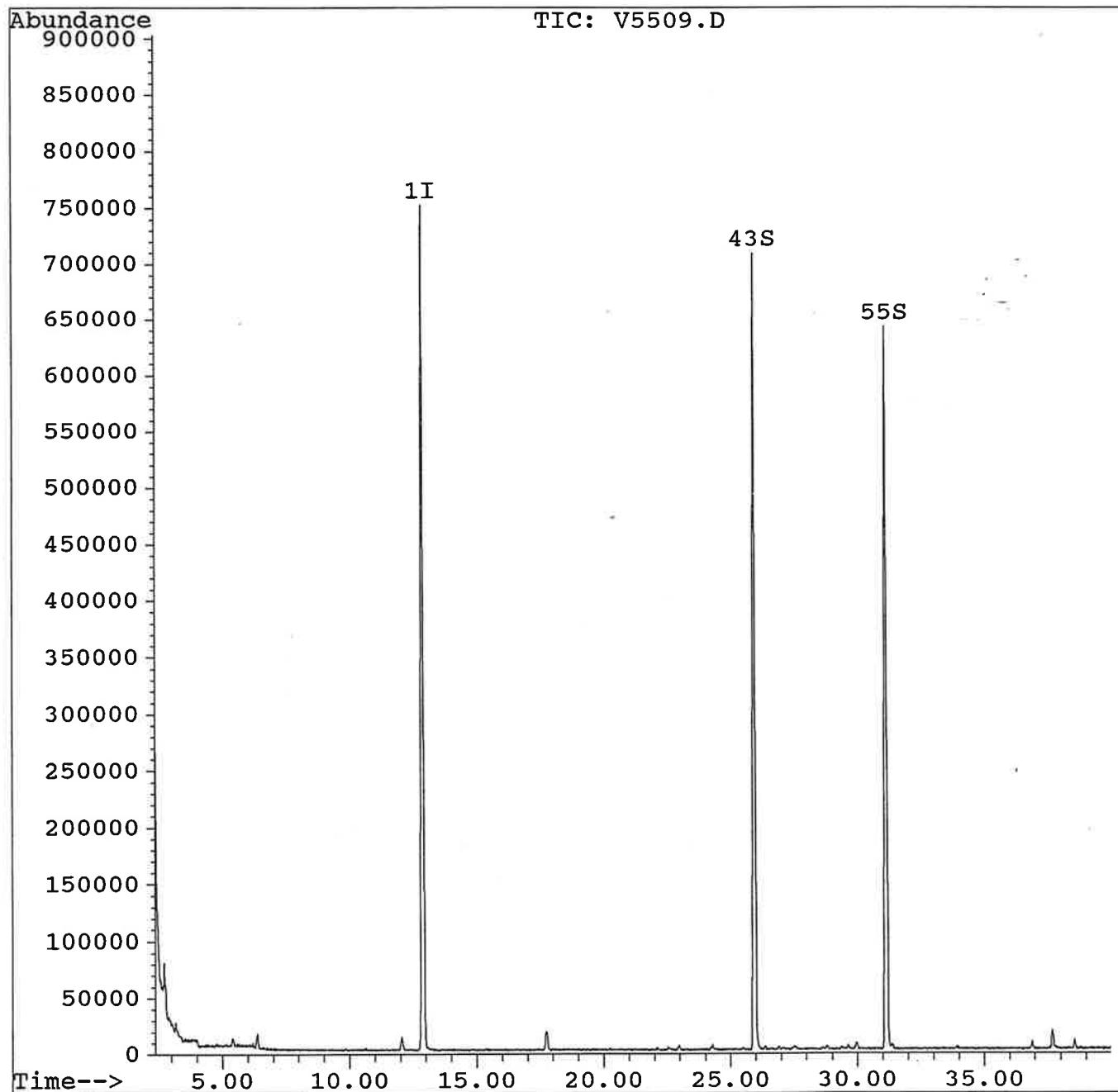
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.88	96	2307553	5.00	ug/L	0.00
System Monitoring Compounds						
43) 4-bromofluorobenzene	25.95	95	916761	5.27	ug/L	105.33%
55) 1,2-dichlorobenzene-d4	31.15	152	617958	5.32	ug/L	106.47%
Target Compounds						
						Qvalue

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5509.D
Acq On : 23 May 98 1:51 pm
Sample : blank
Misc : blank
Quant Time: May 27 10:44 1998

Vial: 7
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



RELIANCE LABORATORIES, INC.

VOLATILE METHOD BLANK SUMMARY

Customer : ICF Kaiser/ArcoLab File ID: V5524.DLab Sample ID: BLANK3Date Analyzed: 5/26/98Time Analyzed: 1204GC Column: DB-624ID: 0.53 (mm)Instrument ID: HP5971A

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01 R-6050.6	EL-42D	V5525.D	1251
02 R-6050.15	CR-51	V5526.D	1339
03 R-6050.16	CR-25	V5527.D	1426
04 R-6050.18	CC-59D	V5528.D	1514
05 R-6050.7	EL-21D	V5529.D	1602
06 R-6050.5	EC-00D	V5530.D	1649
07 R-6050.3MS	EC-58MS	V5531.D	1737
08 R-6050.3MSD	EC-58MSD	V5532.D	1824
09 R-6050.13MS	DL-21MS	V5533.D	1911
10 R-6050.13MSD	DL-21MSD	V5534.D	1959
11 R-6050.16	CR-25D	V5535.D	2046
12 R-6050.15	CR-51D	V5536.D	2133
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COMMENTS:

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5524.D
Acq On : 26 May 98 12:04 pm
Sample : blank
Misc : blank
Quant Time: May 27 10:51 1998

Vial: 7
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration

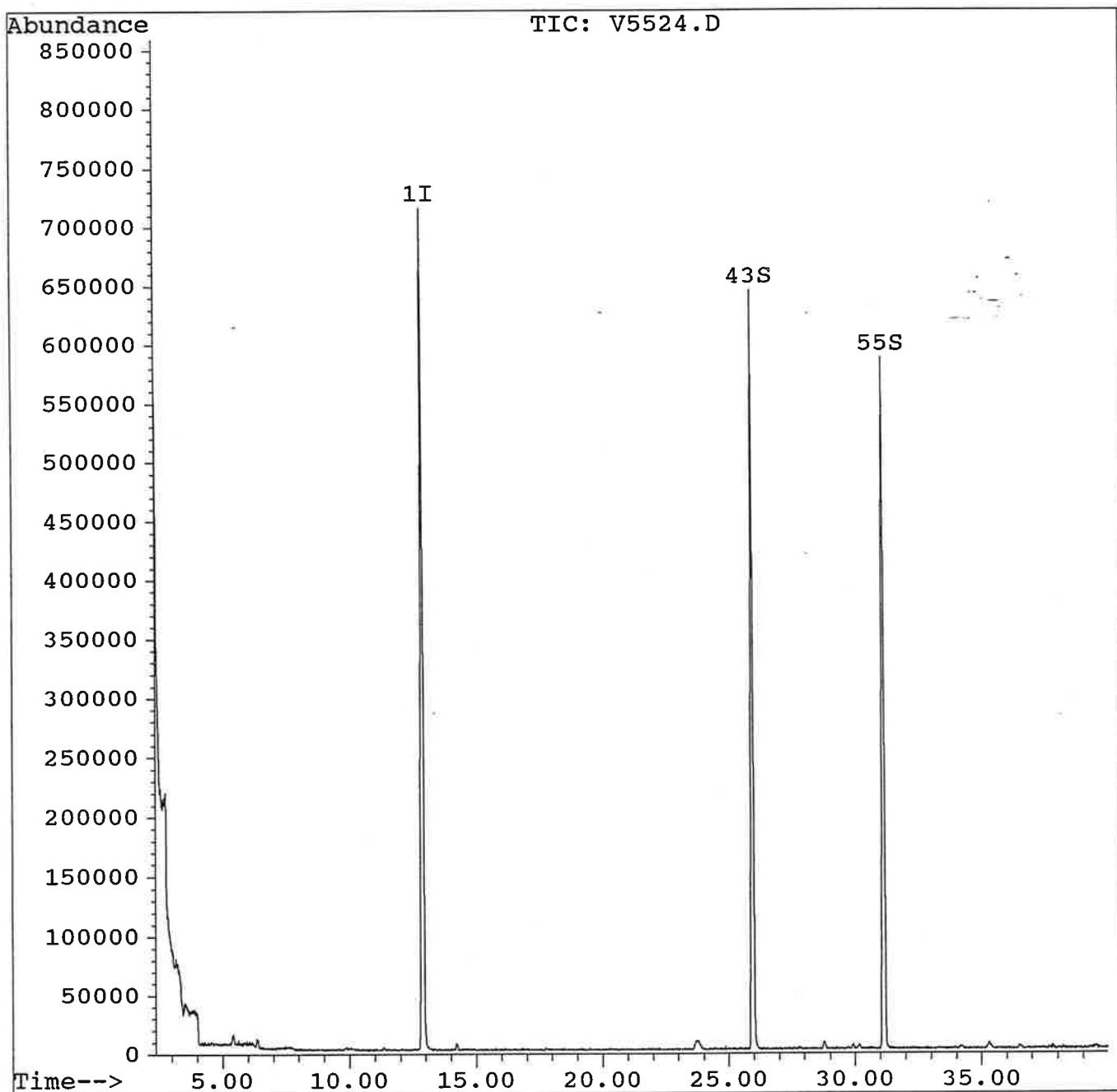
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	12.88	96	2332312	5.00	ug/L	0.00
System Monitoring Compounds						
43) 4-bromofluorobenzene	25.96	95	833883	4.74	ug/L	94.79%
55) 1,2-dichlorobenzene-d4	31.15	152	589806	5.03	ug/L	100.54%
Target Compounds						Qvalue

Quantitation Report

Data File : C:\HPCHEM\1\DATA\V5524.D
Acq On : 26 May 98 12:04 pm
Sample : blank
Misc : blank
Quant Time: May 27 10:51 1998

Vial: 7
Operator: vb
Inst : 5971 - In
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUM524.M
Title : 524.2 Purgable Organics
Last Update : Wed May 27 09:01:39 1998
Response via : Multiple Level Calibration



RELIANCE LABORATORIES, INC.
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Customer : ICF Kaiser/Arco

Lab File ID: V5491.D

BFB Injection Date: 5/22/98

Instrument ID: HP5971A

BFB Injection Time: 0907

GC Column: DB-624 ID: 0.53 (mm)

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	16.1
75	30.0 - 66.0% of mass 95	38.7
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.3
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	79.0
175	4.0 - 9.0% of mass 174	5.6 (7.1)1
176	93.0 - 101.0% of mass 174	78.3 (99.2)1
177	5.0 - 9.0% of mass 176	5.4 (6.9)2

1-Value is % mass 174

2-Value is % mass 176

This check applies to the following SAMPLES, MS, MSD, BLANKS and STANDARDS:

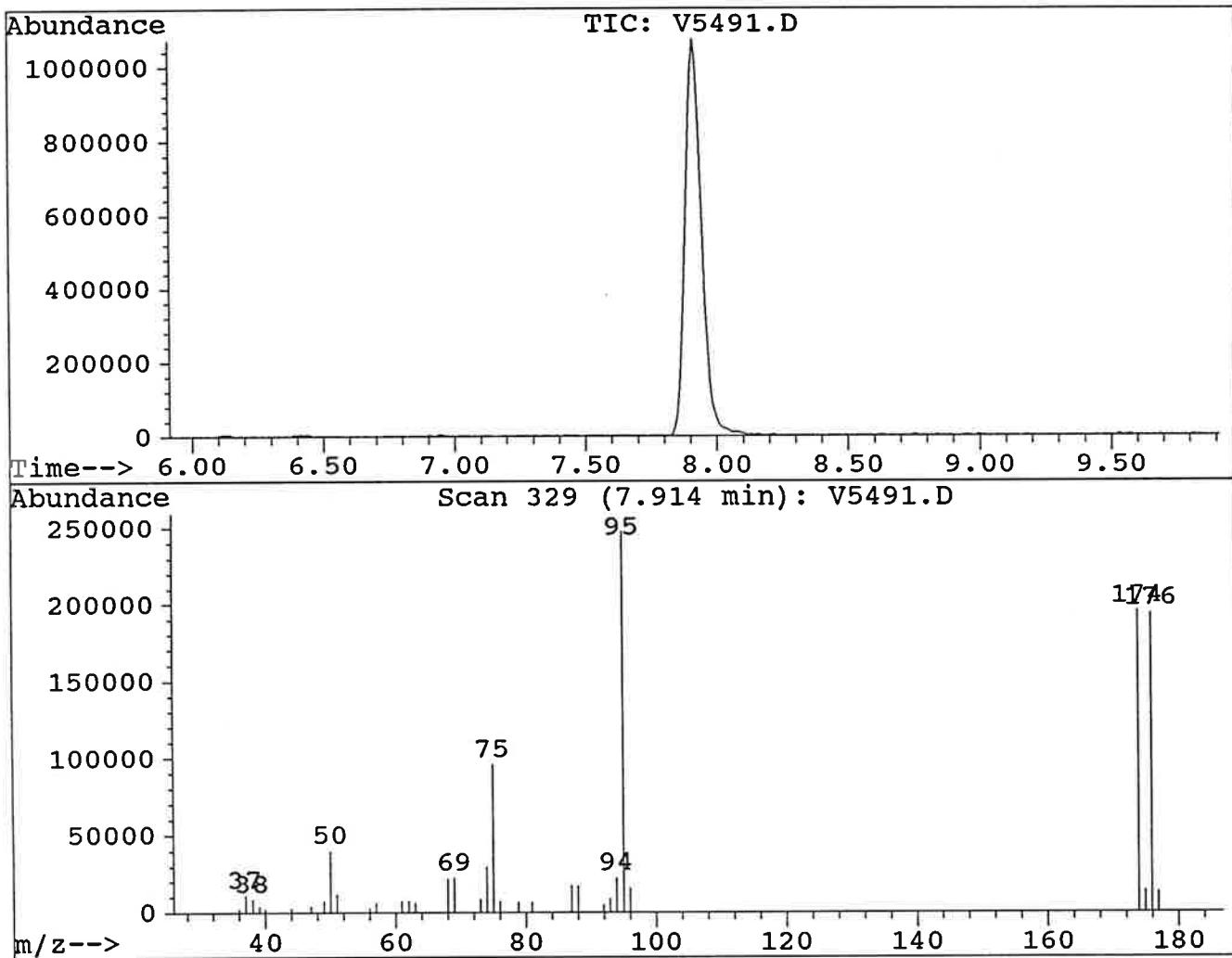
SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01 VSTD010	ICC001	V5492.D	5/22/98	1041
02 VSTD050	ICC005	V5493.D	5/22/98	1128
03 VSTD020	ICC002	V5494.D	5/22/98	1215
04 VBLK01	BLANK1	V5495.D	5/22/98	1306
05 R-6050.1	ER-64	V5496.D	5/22/98	1353
06 R-6050.2	ER-32	V5497.D	5/22/98	1440
07 R-6050.3	EC-58	V5498.D	5/22/98	1528
08 R-6050.4	EC-29	V5499.D	5/22/98	1615
09 R-6050.5	EC-00	V5500.D	5/22/98	1703
10 R-6050.6	EL-42	V5501.D	5/22/98	1750
11 R-6050.7	EL-21	V5502.D	5/22/98	1837
12 R-6050.8	DR-62	V5503.D	5/22/98	1925
13 R-6050.9	DR-31	V5504.D	5/22/98	2012
14 R-6050.10	DC-54	V5505.D	5/22/98	2059
15 R-6050.11	DC-27	V5506.D	5/22/98	2146
16				
17				
18				
19				
20				
21				
22				

BFB

Data File : C:\HPCHEM\1\DATA\V5491.D
 Acq On : 22 May 98 9:07 am
 Sample : bfb
 Misc :

Vial: 1
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics



Peak Apex is scan: 329

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.1	39896	PASS
75	95	30	80	38.7	95728	PASS
95	95	100	100	100.0	247296	PASS
96	95	5	9	6.3	15540	PASS
173	174	0	2	0.0	0	PASS
174	95	50	100	79.0	195328	PASS
175	174	5	9	7.1	13807	PASS
176	174	95	101	99.2	193728	PASS
177	176	5	9	6.9	13322	PASS

RELIANCE LABORATORIES, INC.
 VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
 BROMOFLUOROBENZENE (BFB)

Customer : ICF Kaiser/Arco

Lab File ID: V5507.D

BFB Injection Date: 5/23/98

Instrument ID: HP5971A

BFB Injection Time: 1229

GC Column: DB-624 ID: 0.53 (mm)

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	17.4
75	30.0 - 66.0% of mass 95	37.7
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.2
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	77.5
175	4.0 - 9.0% of mass 174	5.6 (7.3)1
176	93.0 - 101.0% of mass 174	75.8 (97.9)1
177	5.0 - 9.0% of mass 176	4.8 (6.3)2

1-Value is % mass 174

2-Value is % mass 176

This check applies to the following SAMPLES, MS, MSD, BLANKS and STANDARDS:

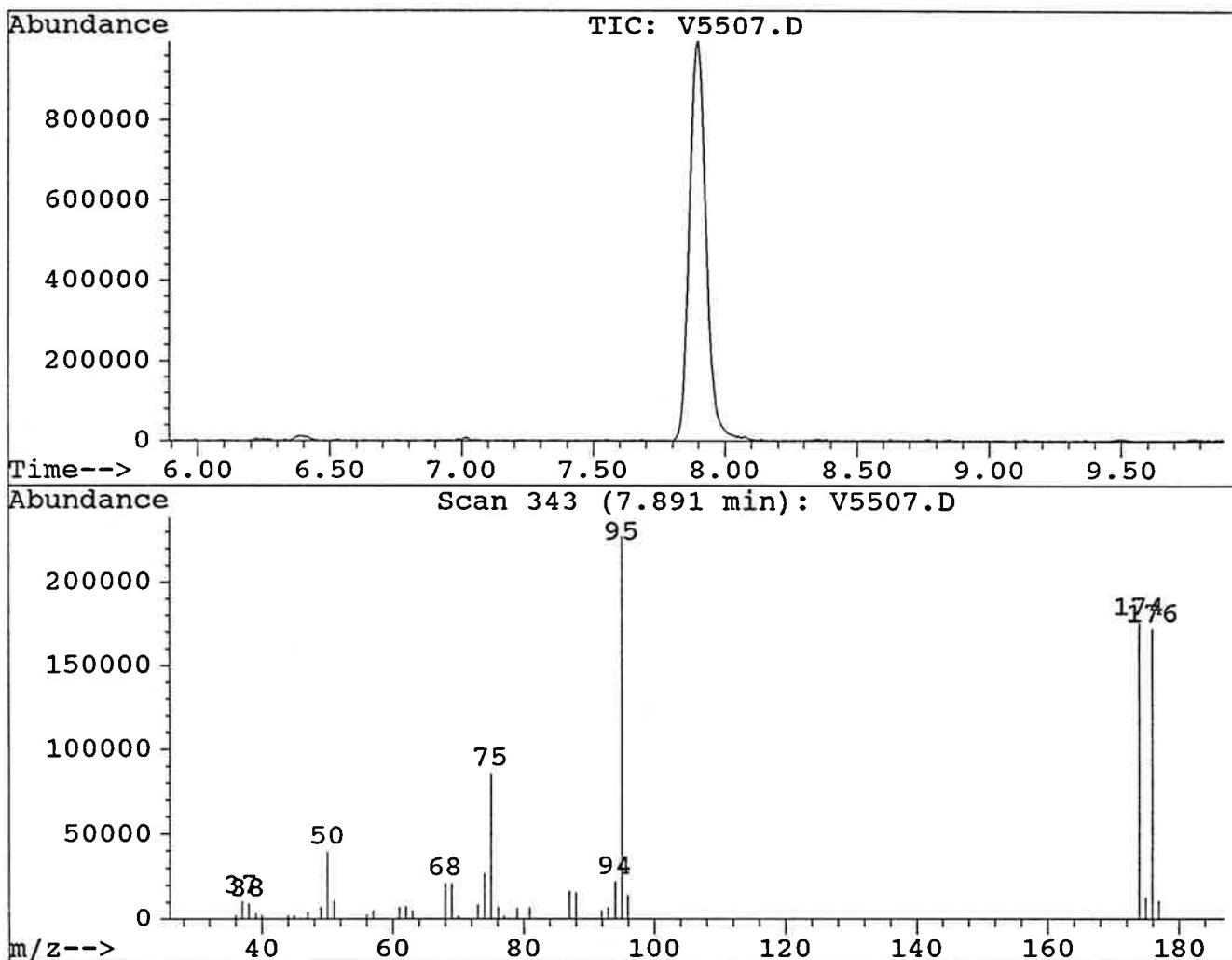
SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD050	CC002	V5508.D	5/23/98
02	VBLK02	BLANK2	V5509.D	5/23/98
03	R-6050.12	DC-00	V5510.D	5/23/98
04	R-6050.13	DL-21	V5511.D	5/23/98
05	R-6050.14	DL-10	V5512.D	5/23/98
06	R-6050.17	CC-00D	V5515.D	5/23/98
07	R-6050.18	CC-59	V5516.D	5/23/98
08	R-6050.19	CC-29	V5517.D	5/23/98
09	R-6050.20	CC-00	V5518.D	5/23/98
10	R-6050.21	CL-16	V5519.D	5/23/98
11	R-6050.22	CL-08	V5520.D	5/23/98
12	R-6050.23	TB-01	V5521.D	5/23/98
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

BFB

Data File : C:\HPCHEM\1\DATA\V5507.D
 Acq On : 23 May 98 12:29 pm
 Sample : bfb
 Misc : bfb

Vial: 5
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics



Peak Apex is scan: 343

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.4	39576	PASS
75	95	30	80	37.7	85648	PASS
95	95	100	100	100.0	227328	PASS
96	95	5	9	6.2	14192	PASS
173	174	0	2	0.0	0	PASS
174	95	50	100	77.5	176192	PASS
175	174	5	9	7.3	12818	PASS
176	174	95	101	97.9	172416	PASS
177	176	5	9	6.3	10862	PASS

RELIANCE LABORATORIES, INC.
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Customer : ICF Kaiser/Arco

Lab File ID: V5522.D

BFB Injection Date: 5/26/98

Instrument ID: HP5971A

BFB Injection Time: 0942

GC Column: DB-624

ID: 0.53 (mm)

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	16.0
75	30.0 - 66.0% of mass 95	37.3
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	82.9
175	4.0 - 9.0% of mass 174	5.8 (7.0)1
176	93.0 - 101.0% of mass 174	80.7 (97.3)1
177	5.0 - 9.0% of mass 176	5.3 (6.5)2

1-Value is % mass 174

2-Value is % mass 176

This check applies to the following SAMPLES, MS, MSD, BLANKS and STANDARDS:

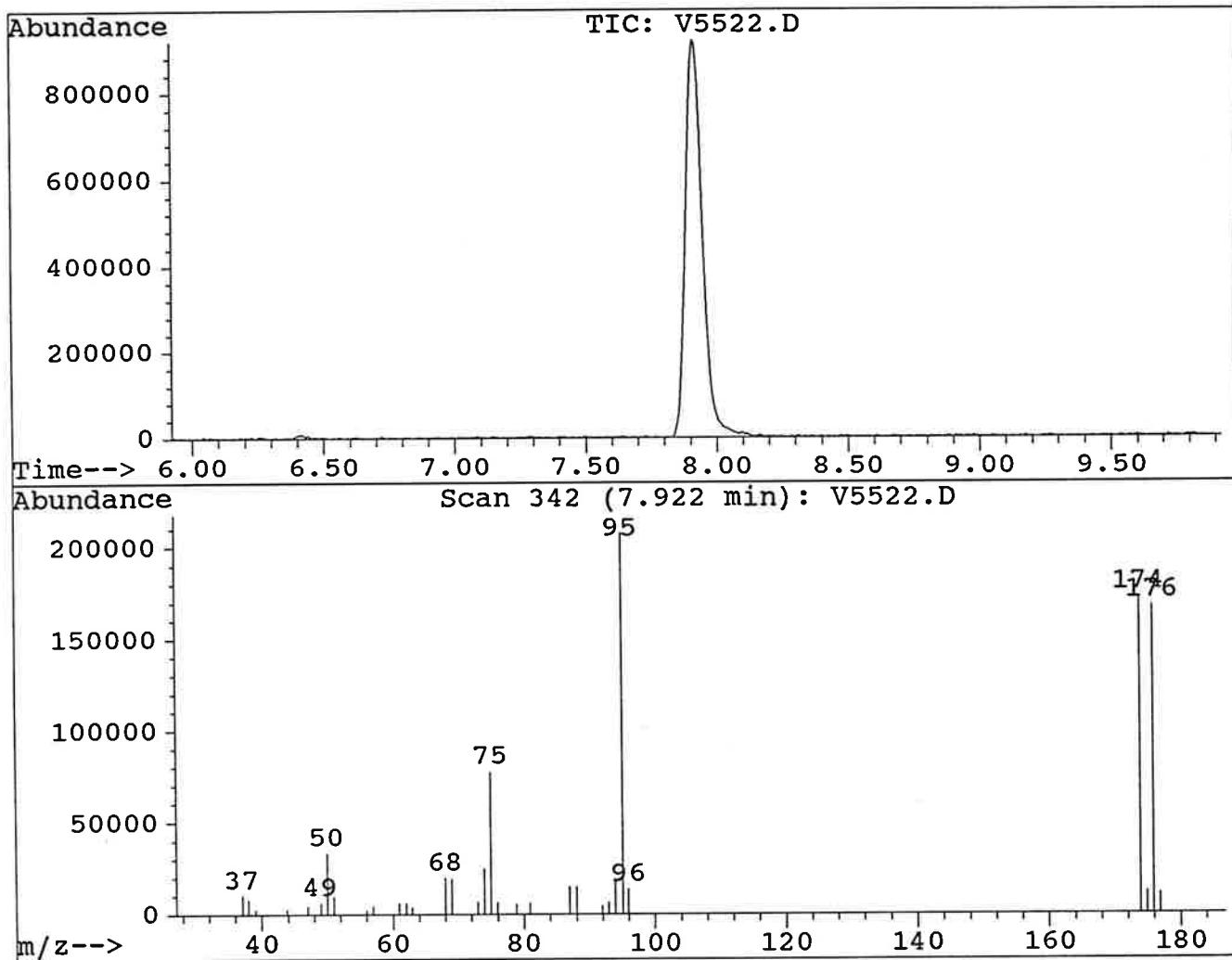
SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD050	CC002D	5/26/98	1026
02	VBLK03	BLANK3	5/26/98	1204
03	R-6050.6	EL-42D	5/26/98	1251
04	R-6050.15	CR-51	5/26/98	1339
05	R-6050.16	CR-25	5/26/98	1426
06	R-6050.18	CC-59D	5/26/98	1514
07	R-6050.7	EL-21D	5/26/98	1602
08	R-6050.5	EC-00D	5/26/98	1649
09	R-6050.3MS	EC-58MS	5/26/98	1737
10	R-6050.3MSD	EC-58MSD	5/26/98	1824
11	R-6050.13MS	DL-21MS	5/26/98	1911
12	R-6050.13MSD	DL-21MSD	5/26/98	1959
13	R-6050.16	CR-25D	5/26/98	2046
14	R-6050.15	CR-51D	5/26/98	2133
15				
16				
17				
18				
19				
20				
21				
22				

BFB

Data File : C:\HPCHEM\1\DATA\V5522.D
 Acq On : 26 May 98 9:42 am
 Sample : bfb
 Misc :

Vial: 1
 Operator: vb
 Inst : 5971 - In
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\RUN524.M
 Title : 524.2 Purgable Organics



Peak Apex is scan: 342

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.0	33328	PASS
75	95	30	80	37.3	77456	PASS
95	95	100	100	100.0	207872	PASS
96	95	5	9	6.5	13507	PASS
173	174	0	2	0.0	0	PASS
174	95	50	100	82.9	172416	PASS
175	174	5	9	7.0	11997	PASS
176	174	95	101	97.3	167808	PASS
177	176	5	9	6.5	10983	PASS

RELIANCE LABORATORIES, INC.

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Customer ICF Kaiser/Arco

Instrument ID: HP5971A

Calibration Date(s): 5/22/98 5/22/98

Calibration Times: 1041 1215

GC Column: DB-624

ID: 0.53 (mm)

RELIANCE LABORATORIES, INC.

VOLATILE CONTINUING CALIBRATION CHECK

Customer : ICF Kaiser/ArcoInstrument ID: HP5971A Calibration Date: 5/23/98 Time: 1304Lab File ID: V5508.D Init. Calib. Date(s): 5/22/98 5/22/98
Init. Calib. Times: 1041 1215GC Column: DB-624 ID: 0.53 (mm)

COMPOUND	RRF	RRF20	MIN RRF	%D	MAX %D
Benzene	0.955	0.815		14.7	
Toluene	1.231	1.371		-11.4	
Ethylbenzene	1.102	0.926		16.0	
m&p-x xylenes	0.789	0.664		15.8	
o-xylene	0.747	0.625		16.3	
Styrene	0.543	0.467		14.0	
4-bromofluorobenzene	0.377	0.381	0.250	-1.1	

All other compounds must meet a minimum RRF of 0.010.

RELIANCE LABORATORIES, INC.

VOLATILE CONTINUING CALIBRATION CHECK

Customer : ICF Kaiser/ArcoInstrument ID: HP5971ACalibration Date: 5/26/98Time: 1026Lab File ID: V5523.DInit. Calib. Date(s): 5/22/98 5/22/98Init. Calib. Times: 1041 1215GC Column: DB-624ID: 0.53 (mm)

COMPOUND	RRF	RRF20	MIN RRF	%D	MAX %D
Benzene	0.955	0.832		12.9	
Toluene	1.231	1.275		-3.6	
Ethylbenzene	1.102	0.958		13.1	
m&p-xylenes	0.789	0.681		13.7	
o-xylene	0.747	0.650		13.0	
Styrene	0.543	0.467		14.0	
4-bromofluorobenzene	0.377	0.381	0.250	-1.1	

All other compounds must meet a minimum RRF of 0.010.

RELIANCE LABORATORIES, INC.
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Customer : ICF Kaiser/Arco

Lab File ID (Standard): V5493.D

Date Analyzed: 5/22/98

Instrument ID: HP5971A

Time Analyzed: 1128

GC Column: DB-624

ID: 0.53 (mm)

	IS1 AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	2219460	12.88				
UPPER LIMIT	4438920	13.38				
LOWER LIMIT	1109730	12.38				
SAMPLE NO.						
01 VBLK01	2233649	12.88				
02 R-6050.1	2242359	12.89				
03 R-6050.2	2221482	12.89				
04 R-6050.3	2174379	12.88				
05 R-6050.4	2256714	12.89				
06 R-6050.5	2169738	12.89				
07 R-6050.6	2217190	12.88				
08 R-6050.7	2137597	12.89				
09 R-6050.8	2207894	12.87				
10 R-6050.9	2320699	12.88				
11 R-6050.10	2251052	12.88				
12 R-6050.11	2125698	12.89				
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

IS1 = Fluorobenzene

AREA UPPER LIMIT = +100% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk

* Values outside of QC limits.

RELIANCE LABORATORIES, INC.
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Customer : ICF Kaiser/Arco

Lab File ID (Standard): V5508.D

Date Analyzed: 5/23/98

Instrument ID: HP5971A

Time Analyzed: 1304

GC Column: DB-624

ID: 0.53 (mm)

	IS1 AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD UPPER LIMIT LOWER LIMIT	2445933	12.87				
	4891866	13.37				
	1222967	12.37				
SAMPLE NO.						
01	VBLK02	2307553	12.88			
02	R-6050.12	2285137	12.88			
03	R-6050.13	2184297	12.89			
04	R-6050.14	2331170	12.89			
05	R-6050.17	2289369	12.89			
06	R-6050.18	2068381	12.89			
07	R-6050.19	2094908	12.89			
08	R-6050.20	2277808	12.89			
09	R-6050.21	2255457	12.89			
10	R-6050.22	2221364	12.89			
11	R-6050.23	2187161	12.88			
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

IS1 = Fluorobenzene

AREA UPPER LIMIT = +100% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk

* Values outside of QC limits.

RELIANCE LABORATORIES, INC.
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Customer : ICF Kaiser/Arco

Lab File ID (Standard): V5523.D

Date Analyzed: 5/26/98

Instrument ID: HP5971A

Time Analyzed: 1026

GC Column: DB-624

ID: 0.53 (mm)

	IS1 AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	2413146	12.90				
UPPER LIMIT	4826292	13.40				
LOWER LIMIT	1206573	12.40				
SAMPLE NO.						
01 VBLK03	2332312	12.88				
02 R-6050.6	2287821	12.89				
03 R-6050.15	2336482	12.88				
04 R-6050.16	2307343	12.90				
05 R-6050.18	2214133	12.89				
06 R-6050.7	2230912	12.89				
07 R-6050.5	2190121	12.88				
08 R-6050.3MS	2045799	12.88				
09 R-6050.3MSD	2338920	12.87				
10 R-6050.13MS	2278048	12.88				
11 R-6050.13MSD	2293344	12.88				
12 R-6050.16	2250652	12.88				
13 R-6050.15	2292208	12.87				
14						
15						
16						
17						
18						
19						
20						
21						
22						

IS1 = Fluorobenzene

AREA UPPER LIMIT = +100% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk

* Values outside of QC limits.

STATE OF NEW JERSEY

Let's protect our earth

DEPARTMENT OF ENVIRONMENTAL PROTECTION



Reliance Laboratories, Inc.
3090 Wood Bridge Avenue
Edison, NJ 08837



Certifies That
Reliance Laboratories, Inc.
3090 Wood Bridge Avenue
Edison, NJ 08837

having duly met the requirements of the

*Regulations Governing Laboratory Certification
And Standards Of Performance N.J.A.C. 7:18 et. seq.*

is hereby approved as a

State Certified Water Laboratory

To perform the analyses as indicated on the Annual Certified Parameter List
which must accompany this certificate to be valid

#12687
PERMANENT CERTIFICATION NUMBER

January 11 1989
DATE

Acting Commissioner
DEPARTMENT OF ENVIRONMENTAL PROTECTION

John J. Dwyer

This certification is subject to unannounced laboratory inspections as specified by
N.J.A.C. 7:18-2.11(d) and agreed to by the Laboratory Manager on filing the application

TO BE CONSPICUOUSLY DISPLAYED AT THE LABORATORY WITH THE ANNUAL CERTIFIED PARAMETER LIST.

APPENDIX D

DATA VALIDATION REPORT

MEMORANDUM

DATE: June 3, 1998
TO: Robert Crowley
FROM: William Henderson
SUBJECT: Data Validation Results, Arco Monaca Facility
JOB NO.: 66567-007-00

Data validation was performed on the volatile organic analytical data from the twenty-three samples collected on May 21, 1998. The validation was performed in accordance with the "National Functional Guidelines for Evaluating Organic Analyses" as modified by USEPA Region III (June 1992). Reliance Laboratories, Inc. performed the analyses using EPA Method 524.2, (EPA-600/R-92-129, August 1992). The samples reviewed included:

<u>Field Sample ID</u>	<u>Lab Sample ID</u>
RC-ER-64-0598	R-6050.1
RC-ER-32-0598	R-6050.2
RC-EC-58-0598	R-6050.3
RC-EC-29-0598	R-6050.4
RC-EC-00-0598	R-6050.5
RC-EL-42-0598	R-6050.6
RC-EL-21-0598	R-6050.7
RC-DR-62-0598	R-6050.8
RC-DR-31-0598	R-6050.9
RC-DC-54-0598	R-6050.10
RC-DC-27-0598	R-6050.11
RC-DC-00-0598	R-6050.12
RC-DL-21-0598	R-6050.13
RC-DL-10-0598	R-6050.14
RC-CR-51-0598	R-6050.15
RC-CR-25-0598	R-6050.16
RC-CC-00-0598D	R-6050.17
RC-CC-59-0598	R-6050.18
RC-CC-29-0598	R-6050.19
RC-CC-00-0598	R-6050.20
RC-CL-16-0598	R-6050.21
RC-CL-08-0598	R-6050.22
RC-TB-01-0598	R-6050.23

 **ICF KAISER**
ICF KAISER ENGINEERS, INC.

Items reviewed and actions taken were as follows:

Method: USEPA Method 524.2.

Samples: All samples.

Holding Time: All samples were analyzed within the 14-day holding time. Note that all samples were field preserved with hydrochloric acid.

Blanks: No target compounds were detected in any of the associated method blanks or the trip blank, sample RC-TB-01-0598.

Surrogates: All 4-bromofluorobenzene and 1,2-dichlorobenzene-d4 surrogate recoveries were within the 80-120 percent criteria.

Internal Standards: All fluorobenzene internal standards were within the established criteria for area and retention time.

BFB Tunes: All bromofluorobenzene (BFB) tunes met mass calibration criteria. Sample RC-DC-27-0598 was analyzed at 2146 hours on May 22, 1998, outside of the 12-hour window from the BFB tune (0907 on May 22, 1998). All results for sample RC-DC-27-0598 were qualified "J" as estimated.

Initial Calibrations: The initial calibration performed on May 22, 1998 for Instrument HP5791A met the 20 percent relative standard deviation (RSD) and 0.05 minimum relative response factor criteria for all compounds.

Continuing Calibrations: All continuing calibrations met the percent difference and minimum relative response factor criteria for all compounds.

Matrix Spike/Duplicate: The matrix spike/duplicates performed on samples RC-EC-58-0598 and RC-DL-21-0598 met all accuracy and precision criteria.

Target Compound Identification/Quantitation: No problems were identified with compound identification or quantitation.

Field Duplicate: The field duplicate pair of RC-CC-00-0598 and RC-CC-00-0598D had positive results for benzene (0.18 and 0.22 µg/L, respectively) within the relative percent difference (RPD) criteria of 35 percent. All other results for both samples were below the respective reporting limits.

Summary: The data were acceptable as reported with the following qualifications:

Sample	Compounds	Qualifiers
RC-DC-27-0598	All compounds	J